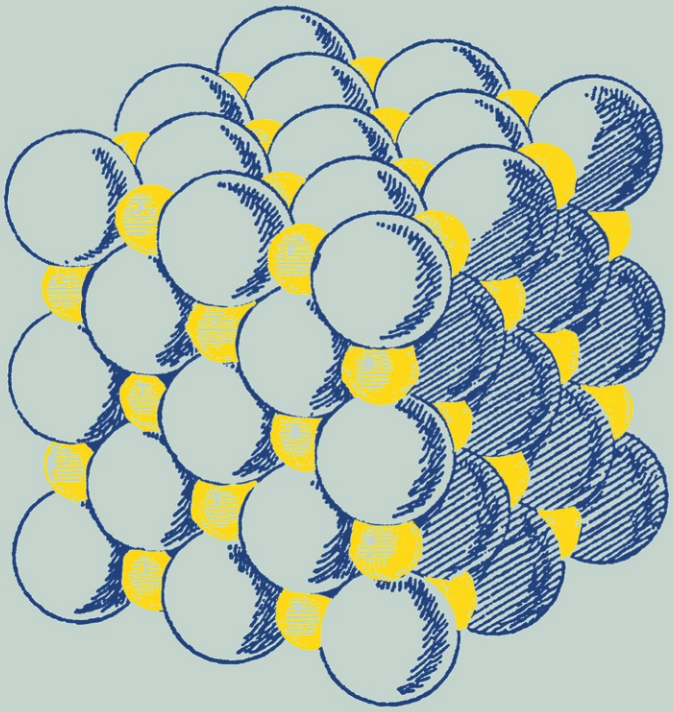
J. Lima-de-Faria

Structural Classification of Minerals

Volume 3: Minerals with A_pB_q ... E_xF_y ... nAq. general chemical formulas and organic minerals



SOLID EARTH SCIENCES LIBRARY

SPRINGER-SCIENCE+BUSINESS MEDIA, B.V.

Structural Classification of Minerals

Volume 3

Solid Earth Sciences Library

Volume 11B

The titles in this series are listed at the end of this volume.

Structural Classification of Minerals

Volume 3: Minerals with $A_pB_q...E_xF_y...nAq$. General Chemical Formulas and Organic Minerals

by

J. LIMA-DE-FARIA

Centro de Cristalografia e Mineralogia,
Instituto de Investigação Científica Tropical, Lisbon, Portugal

SPRINGER-SCIENCE+BUSINESS MEDIA, B.V.

Library of Congress Cataloging-in-Publication Data is available.

ISBN 978-94-010-3778-5 ISBN 978-94-007-1056-6 (eBook)
DOI 10.1007/978-94-007-1056-6

Printed on acid-free paper

Cover illustration: Packing drawing of a possible binary compound AB (Barlow, 1898, Fig. 8, p. 453); today known to correspond to halite, NaCl

Originally published by Kluwer Academic Publishers in 2004
Softcover reprint of the hardcover 1st edition 2004

The more men are learned, the more they have loaded their minds with acquired knowledge, the less they are fit to examine from a critical standpoint the bottom of the thoughts which have shaped their conception of things. It is in this sense that it has been rightly stated that it is what we know that prevents us from finding out what we do not know.

Maurice de Broglie[a]

[a] In *Les Premiers Congrés de Physique Solvay* (Albín Michel edit., 1951, p. 10)

Contents

Complementary information

It will be seen that we have adopted in this volume the same method of study as was used in the preceding volumes.

In the systematic tables, the first reference is normally the one to which the crystal data corresponds. Whenever a space group is followed by omission points (...) it is meant that other space groups are also possible. Some new symbols are used in the tables, namely c/h to indicate a certain combination of c and h closest stackings; S. means a crystallographic system, and s.g. denotes a space group. A crystallographic system is placed within curved brackets whenever it is different from the system to which the *Mineral Reference Manual* ascribes the mineral. An example is Lindackerite (Tic.), a mineral that the above-mentioned book refers to as Monoclinic.

The book *Encyclopedia of Mineral Names* is also abbreviated as Enc.Min.Nam. The designation of defect derivatives should be applied only to mineral structures with small numbers of missing atoms, such as Pyrrhotite-4C $(Fe_7,\square)^o[S]_8^h$ or Laihumite $(Fe_{0.8}^{+2},Fe_{0.8}^{+3},\square_{0.4})^oSi^t[O]_4^c$. Dzhalindite $In^o[\square(OH)_3]^c$ is better called a subtraction derivative of Perovskite $Ti^o[CaO_3]^c$.

When a chemical element is replaced by two elements in a disordered way the resultant mineral structure should be called a disordered derivative. An example is Polhemusite $(Zn,Hg)^t[S]^c$, a disordered derivative of Sphalerite $Zn^t[S]^c$.

Systematic tables

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
AKDALAITE	$(Al_2O_3)_4.H_2O$	$Al_8^{o}[O_{12}(H_2O)]^{n}$	Hex. $P6_122$ ...	a=12.87Å Z=18 c=14.97Å			Am.Min.,1971,56,635(Abs.); Pov.,281-282;RRW,7;Hölzel, 84.
ANTARCTICITE	$CaCl_2.6H_2O$	$Ca^{o}[(H_2O)_6Cl_2]$	Trig. P321	a=7.907Å Z=1 c=3.95Å			Enc.Min.Nam.,19;Am.Min., 1969,54,1018-1025;Str.Tab., 159;Hölzel,50;Pov.639.
ANTHONYITE	$Cu(OH,Cl)_2.3H_2O$		Mon. ?	? β=112°38'			Am.Min.,1963,48,614-619; RRW,27-28;Pov.,325;Str.Tab., 165;Hölzel,53.
BARIANDITE	$V_5O_{12}.6H_2O$		Mon. Cc ...	a=11.7Å β=101°30' b=3.65Å Z=4 c=29.06Å			Am.Min.,1990,75,508-521; Bull.Min.,1971,94,49-54; Am. Min.,1972,57,1555(Abs.); RRW,50.
BISCHOFITE	$MgCl_2.6H_2O$	$Mg^{[6/8]}[(H_2O)_6Cl_2]$	Mon. C2/m	a=9.90Å β=93°42' b=7.15Å Z=2 c=6.10Å			RRW,72;LF,306;Pov.,639-640; Str.Tab.,159;SB,3,124-125, 489-491;Hölzel,50.
CALUMETITE	$Cu(OH,Cl)_2.2H_2O$		?	?			RRW,104;Str.Tab.,165;Pov., 325;Hölzel,53;Am.Min.,1963, 48,614-619.
CHLORALUMINITE	$AlCl_3.6H_2O$	$Al^{o}[Cl_3(H_2O)_6]$	Trig. R 3c	a=11.82Å a_R=7.87Å c=11.82Å α=97° Z=6 Z_R=2			RRW,125-126;Pov.,638;Str. Tab.,159; Hölzel,50.
ERIOCHALCITE	$CuCl_2.2H_2O$	$Cu^{sq}[Cl_2(H_2O)_2]^{Os}$	Orth. Pbmn	a=7.4141Å Z=2 b=8.0886Å c=3.7458Å	Cu(2a) Cl(4h) O(4e) H(8i)		Zeit.Krist.,1989,189,13-15; Pov.,638-639;Str.Tab.,158; RRW,195;Hölzel,50.
LENOBLITE	$V_2O_4.2H_2O$		?	?			Bull.Min.,1970,93,235-241;Am. Min.,1971,56,635-636(Abs.); Hölzel, 87;Pov.,333;RRW,352.
MASUYITE	$UO_3.2H_2O$		Orth. Pcna	a=13.98Å Z=24 b=12.11Å c=14.20Å			Am.Min.,1960,45,1026-1061; Pov.,320-321;Str.Tab.,224; RRW,385;Hölzel,89.
METASCHOEPITE	$UO_3.1\text{-}2H_2O$		Orth. Pbna	a=13.99Å Z=32 b=16.72Å c=14.73Å			RRW,399;Pov.,749;Str.Tab., 226;Am.Min.,1960,45,1027-1061;Am.Min.,1965,50,235-239.
METASTUDTITE	$UO_4.2H_2O$		Orth. I mmm	a=6.51Å Z=2 b=8.78Å c=4.21Å			Am.Min.,1983,68,456-458; Hölzel,89.
MEYMACITE	$WO_3.2H_2O$		Amorph.				Am.Min.,1968,53,1065(Abs.); RRW,404;Pov.,749,320;Str. Tab.,224;Hölzel,81.

Table 174

$A_mB_n.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
NAVAJOITE	$V_2O_5.3H_2O$		Mon. ?	a=17.43Å β=97° b=3.65Å Z=6 c=12.25Å			Am.Min.,1990,75,508-521; RRW,431;Pov.,321;Str.Tab., 220;Hölzel,87.
NICKELBISCHO-FITE	$NiCl_2.6H_2O$	$Ni^{[7/8]}[(H_2O)_6Cl_2]$	Mon. C2/m	a=10.318Å β=122.37° b=7.077Å Z=2 c=6.623Å			Am.Min.,1980,65,207-208; Hölzel,50.
OPAL	$SiO_2.nH_2O$		Amorph.	-			Am.Min.,1975,60,749-757; RRW,448;Str.Tab.,195.
ROKÜHNITE	$FeCl_2.2H_2O$		Mon. C2/m	A=7.396Å β=97.68° B=8.458Å Z=2 C=3.638Å			Am.Min.,1981,66,219(Abs.); Min.Abs.,82M/4662;Hölzel,50.
SCHOEPITE	$UO_3.2H_2O$	$U^{[7]}[O_3(H_2O)_2]$	Orth. $P2_1ca$	A=14.337Å Z=32 B=16.813Å C=14.731Å	U_{I-VIII}(4a) ...		Can.Min.,1996,34,1071-1088; Pov.,320;Str.Tab.,225;RRW, 545;Hölzel,89.
SIDWILLITE	$MoO_3.2H_2O$	$Mo^{o}[O_3(H_2O)_2]^{c?}$	Mon. $P2_1/n$	A=10.618Å β=91.61° B=13.825Å Z=16 C=10.482Å			Am.Min.,1986,71,1546;Hölzel, 81;Bull.Min.,1985,108,813-823
SILHYDRITE	$Si_3O_6.H_2O$		Orth. ?	A=14.519Å Z=1 B=18.80Å c=15.938Å			Am.Min.,1972,57,1053-1065; Hölzel,72;RRW,561.
SINJARITE	$CaCl_2.2H_2O$		Tet. ?	a=7.19Å Z=2 c=5.85Å			Hölzel,50;Min.Mag.,1980,43, 643-645.
STUDTITE	$UO_4.4H_2O$		Mon. C2 ...	a=11.85Å β=93°51' b=6.80Å Z=2 c=4.25Å			Am.Min.,1974,59,166-171; RRW,589;Hölzel,89.
TUNGSTITE	$WO_3.H_2O$		Orth. Pmnb	?			Enc.Min.Nam.,310;Hölzel,81; Pov.,320;Str.Tab.,224.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ADMONTITE	$Mg_2B_{12}O_{20}.15H_2O$		Mon. $P2_1/c$	a=12.68Å β=109°68' b=10.07Å Z=2 c=11.32Å			Enc.Min.Nam.,10;Am.Min., 1980,65,205(Abs.);Min.Abs., 81-1866;Hölzel,116.
AHLFELDITE	$NiSeO_3.2H_2O$	$Ni^{[4+2]}Se^{[3n]}[O_3(H_2O)_2]$ (=Cobaltomenite)	Mon. $P2_1/n$	a=7.53Å β=99°5' b=8.76Å Z=4 c=6.43Å			RRW,6;Am.Min.,1969,54,448-456;Am.Min.,1963,48,1183 (Abs.);Pov.,565-566;Str.Tab., 228.
ALUNOGEN	$Al_2(SO_4)_3.17H_2O$	$(H_2O)_{17}Al_2^{o}\{g\}[S^{t}O_4]_3$.	Tric. P $\bar{1}$	a=7.420Å α=89°57' b=26.97Å β=97°34' c=6.062Å γ=91°53' Z=2	$Al_{I\text{-}II}(2i)$ $S_{I\text{-}III}(2i)$ $O_{I\text{-}XII}(2i)$ ...		Am.Min.,1976,61,311-317;SR, 41A,343-344;SR,42A,368-369; RRW,15;Pov.,593.
ANNABERGITE	$Ni_3(AsO_4)_2.8H_2O$	$Ni_3^{o}As_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.179Å β=105.00° b=13.309Å Z=2 c=4.725Å	$Ni_I(2a)$ $Ni_{II}(4g)$ As(4i) ...		Eur.J.Min.,1996,8,187-192;LF, 307;RRW,26,Pov.,726,523, 558;Str.Tab.,335.
APACHITE	$Cu_9Si_{10}O_{29}.11H_2O$		Mon. ?	a=12.89Å β=90.42° b=6.055Å Z=1 c=19.11Å			Min.Mag.,1980,43,639-641; Am.Min.,1980,65,1065(Abs.); Hölzel, 209.
APLOWITE	$(Co,Mn,Ni)SO_4.4H_2O$	$(Co,Mn,Ni)^{o}S^{t}[O_4(H_2O)_4]$	Mon. $P2_1/n$	a=5.94Å β=90°30' b=13.66Å Z=4 c=7.90Å			RRW,30;Pov.,602;Str.Tab., 281;Hölzel,126.
ARAVAIPAITE	$Pb_3AlF_9.H_2O$	$Pb_3Al^{o}[F_9(H_2O)]$	Tric. P1 ...	a=5.842Å α=93.84° b=25.20Å β=90.14° c=5.652Å γ=85.28° Z=4			Am.Min.,1989,74,927-933;Min. Abs.,90M/2074;Hölzel suppl..
AURORITE	$(Mn,Ag,Ca)Mn_3O_7.3H_2O$		Tric. P $\bar{1}$ ...	?			Enc.Min.Nam.,27;Pov.,333;Str. Tab.,219;Am.Min.,1967,52, 1581(Abs.);Hölzel,85.
BARIĆITE	$(Mg,Fe)_3(PO_4)_2.8H_2O$	$(Mg,Fe)_3^{o}P_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.075Å β=104°52' b=13.416Å Z=2 c=4.670Å			Can.Min.,1976,14,403-406;LF, 307;Hölzel,160.
BARNESITE	$Na_2V_6O_{16}.3H_2O$	$Na_2^{[4+2]}V_6^{[5\delta y]}[O_{16}(H_2O)_3]$	Mon. P2/m	a=12.17Å β=95°2' b=3.602Å Z=1 c=7.78Å			Am.Min.,1963,48,1187-1195; Am.Min.,1990,75,508-521; Hölzel,88;Pov.,500-501;RRW, 51;Str.Tab.,223.
BARRERITE	$(Na,K,Ca)_5(Si,Al)_{24}O_{48}.17H_2O$	$(Na,K,Ca)_5^{[8]}(H_2O)_{17}\{3\infty\}[(Si,Al)_{24}^{t}O_{48}]$ (≈Stilbite,Zeolite)	Orth. Amma	a=13.64Å Z=2 ? b=18.20Å c=17.84Å			Gottardi+Galli,1985,284;LF, 299;SR,41A,401;Can.Min., 1997,35, 691-698.
BASSANITE	$CaSO_4.0.5H_2O$		Orth. A2	a=12.70Å β=90°36' b=6.83Å Z=3 c=11.94Å			RRW,54;Pov.,590;Str.Tab., 291;Hölzel,131.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
BAURANOITE	$BaU_2O_7.4\text{-}5H_2O$		? ?	?			Am.Min.,1973,58,1111;Hölzel, 89.
BELLINGERITE	$Cu_3(IO_3)_6.2H_2O$	$\{3\infty\}[Cu_3^{o}$ $\{g\}[I^{[3n]}O_3]_6(H_2O)_2]$	Tric. P $\bar{1}$	a=7.256Å α=105.10° b=7.950Å β=92.95° c=7.856Å γ=96.95° Z=1	Cu_I(1a) Cu_{II}(2i) $I_{I\text{-}III}$(2i) $O_{I\text{-}X}$(2i)		Acta Cryst.,1974,B30,965-974; Pov.,630;Str.Tab.,230;SR,40A, 276;RRW,59.
BIANCHITE	$(Zn,Fe)SO_4.6H_2O$	$(Zn,Fe)^{o}S^{t}[O_4(H_2O)_6]$ (=Hexahydrite)	Mon. C2/c	a=10.02Å β=98°30' b=7.26Å Z=8 c=24.21Å			Hölzel,127;RRW,69;Pov.,729, 591;Str.Tab.,282.
BIEBERITE	$CoSO_4.7H_2O$	$Co^{o}S^{t}[O_4(H_2O)_7]$	Mon. $P2_1/c$	a=14.13Å β=105°5' b=6.55Å Z=4 c=11.00Å			RRW,69;Pov.,592-593;Str. Tab.,283;Hölzel,128;Encyc. Miner.Nam.,39.
BILINITE	$Fe_3(SO_4)_4.22H_2O$		Mon. P2 ?	?			Enc.Min.Nam.,39;RRW,70; Pov.,598;Str.Tab.,285;Hölzel, 129.
BOBIERRITE	$Mg_3(PO_4)_2.8H_2O$	$Mg_3^{o}P_2^{t}[O_8(H_2O)_8]$ (Dist.d.Vivianite)	Mon. C2/c	a=4.667Å β=105.01° b=27.926Å Z=4 c=10.067Å	$Mg_{I\text{-}III}$(4e) P(8f) $O_{I\text{-}VIII}$(8f)		Am.Min.,1986,71,1229-1233; Pov.,558;Str.Tab.,335;RRW, 77;Hölzel,160.
BONATTITE	$CuSO_4.3H_2O$	$2\infty[Cu^{o}S^{t}O_4(H_2O)_3]$	Mon. Cc	a=5.592Å β=97°3' b=13.029Å Z=4 c=7.341Å	Cu(4a) S(4a) $O_{I\text{-}VII}$(4a)		Acta Cryst.,1968,B24,508-513; Pov.,590;Str.Tab.,280;RRW, 79;SR,33A,368-369;Zeit.Krist., 1998,213,141-150.
BOOTHITE	$CuSO_4.7H_2O$	$Cu^{o}S^{t}[O_4(H_2O)_7]$	Mon. $P2_1/c$	a=11.83Å β=105°36' b=7.29Å Z=4 c=10.94Å			Hölzel,127;Pov.,592-593;Str. Tab.,283;RRW,79.
BOYLEITE	$(Zn,Mg)SO_4.4H_2O$		Mon. $P2_1/n$	a=5.95Å β=90°18' b=13.60Å Z=4 c=7.96Å			Am.Min.,1979,64,241-245 (Abs.);Str.Tab.,511,440; Hölzel,126.
BROCKITE	$(Ca,Th,Ce)PO_4.$ H_2O	$(Ca,Th,Ce)^{[8]}P^{t}$ $[O_4(H_2O)]$ (=Rhabdophane-Ce)	Hex. $P6_222$	a=6.98Å Z=3 c=6.40Å			Am.Min.,1962,47,1346-1355; Pov.,546-547;Str.Tab.,314; RRW, 89-90;Hölzel,165.
BRÜGGENITE	$Ca(IO_3)_2.H_2O$		Mon. $P2_1/c$	a=8.505Å β=95°15' b=10.000Å Z=4 c=7.498Å			Am.Min.,1972,57,1191(Abs.); RRW,91-92;Hölzel,95.
CADWALADERITE	$AlCl(OH)_2.4H_2O$		Amorph.	-			Pov.,659;Str.Tab.,159;RRW, 99;Hölzel,54.
CALCIOURANOITE	$(Ca,Ba,Pb,K,Na)U_2O_7.5H_2O$		? ?	?			Am.Min.,1975,60,161(Abs.); Hölzel, 89

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
CALKINSITE - - (Ce)	$(Ce,La)_2(CO_3)_3.4H_2O$		Orth. $P2_122_1$	a=9.57Å Z=4 b=12.65Å c=8.94Å			RRW,103;Pov.,618;Str.Tab., 246;Hölzel,105.
CARLHINTZEITE	$Ca_2AlF_7.H_2O$		Tric. C $\bar{1}$...	a=9.48Å α=91.4° b=6.98Å β=104.85° c=9.30Å γ=90.0° Z=4			Am.Min.,1980,65,205-206 (Abs.); Hölzel,52.
CARNALLITE	$KMgCl_3.6H_2O$	$K^oMg^o[Cl_3(H_2O)_6]$	Orth. Pnna	a=16.119Å Z=12 b=22.472Å c=9.551Å	K_I(4c) K_{II}(8e) Mg_I(4d) Mg_{II}(8e) Cl_I(4d) Cl_{II-V}(8e) ...		Am.Min.,1985,70,1309-1313; LF,309;RRW,108;Pov.,640;Str. Tab.,164;Hölzel,52;SB,7,19-21.
CHALCANTHITE	$CuSO_4.5H_2O$	$(H_2O)\{1\infty\}[Cu^oS^tO_4(H_2O)_4]$ (=Pentahydrite)	Tric. P $\bar{1}$	a=6.116Å α=82.36° b=10.716Å β=107.31° c=5.961Å γ=102.61° Z=2	Cu_I(1a) Cu_{II}(1e) S(2i) O_{I-IX}(2i) H_{I-X}(2i)		Sov.Phys.Cryst.,1983,28,383-387;LF,317;RRW,117;Pov., 591;Str.Tab.,281;Hölzel,127; Zeit.Krist.,1998,213,141-150.
CHALCOMENITE	$CuSeO_3.2H_2O$	$Cu^oSe^{[3n]}[O_3(H_2O)_2]$ (=Teineite,≈Ahlfeldite)	Orth. $P2_12_12_1$	a=6.67Å Z=4 b=9.19Å c=7.38Å	Cu(4a) S(4a) O_{I-V}(4a)		SR,22,474;Am.Min.,1964,49, 1481-1485;RRW,118-119; Pov.,564-566;Str.Tab.,227-228.
CHALCOPHANITE	$(Zn,Fe,Mn)Mn_3O_7.3H_2O$	$(Zn,Fe,Mn)^oMn_3^o[O_7(H_2O)_3]$	Trig. R $\bar{3}$	a=7.533Å Z=6 c=20.794Å	Zn(6c) Mn(18f) O_{I-III}(18f) O_{IV}(6c)		Am.Min.,1988,73,1401-1404; Pov.,329-330;Str.Tab.,219; RRW,119;SR,19,454-455.
CHURCHITE - - (Nd)	$NdPO_4.2H_2O$	$2\infty[Nd^{[6+2]}(H_2O)_2P^tO_4]$	Mon. A2/a ...	a=5.61Å β=115.3° b=15.14Å Z=4 c=6.19Å		Dist.deriv. $2\infty[Ca^{[6+2]}(H_2O)_2S^tO_4]$ GYPSUM.	Min.Abs.,88-1076;RRW,132, 665;K/B,159;Pov.,557;Str.Tab., 517,587,339;LF,248.
CHURCHITE - (Y)	$(Y,Er)PO_4.2H_2O$	$2\infty[(Y,Er)^{[6+2]}(H_2O)_2P^tO_4]$	Mon. A2/a	a=5.47Å β=113°24' b=15.15Å Z=4 c=6.29Å		Dist.deriv. $2\infty[Ca^{[6+2]}(H_2O)_2S^tO]$ GYPSUM	Pov.,557;LF,248;Str.Tab.,339; Hölzel,165.
CHVALETICEITE	$(Mn,Mg)SO_4.6H_2O$		Mon. C2/c	a=10.05Å β=98.0° b=7.24Å Z=8 c=24.3Å			Am.Min.,1987,72,1023-1028 (Abs.);Hölzel,127.
CLARINGBULLITE	$Cu_4Cl(OH)_7.nH_2O$	$Cu^oCu_3^p[(OH)_7Cl(H_2O)_n]$	Hex. $P6_3/mmc$	a=6.6733Å Z=2 c=9.185Å	Cu_I(2a) Cu_{II}(6h) Cl_I(2d) Cl_{II}(2b) ...		Can.Min.,1995,33,633-639; Min.Mag.,1977,41,433-436.
CLINOCHALCOMENITE	$CuSeO_3.2H_2O$		Mon. $P2_1/n$	a=8.177Å β=97°16' b=8.611Å Z=4 c=6.290Å			Am.Min.,1981,66,217(Abs.); Hölzel,92.
COBALTOMENITE	$CoSeO_3.2H_2O$	$Co^oSe^{[3n]}[O_3(H_2O)_2]$ (=Ahlfeldite)	Mon. $P2_1/n$	a=6.46Å β=99°0' b=8.75Å Z=4 c=7.55Å			Pov.,565-566;Str.Tab.,228; RRW,139;Hölzel,92.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
COQUIMBITE	$Fe_2(SO_4)_3.9H_2O$	$(H_2O)_6\{g\}[Fe_3^{o}S_6^{t}O_{24}(H_2O)_6]\{g\}[Fe^{o}(H_2O)_6]$	Trig. P $\bar{3}$1c	a=10.922Å Z=4 c=17.084Å	Fe_I(2b) Fe_{II}(2c) Fe_{III}(4f) S(12i) ...		Am.Min.,1970,55,1534-1540; Pov.,593;Str.Tab.,284;RRW, 145-146;SR,40A,310;Zeit. Krist.,1998,213,141-150.
COYOTEITE	$NaFe_3S_5.2H_2O$	$Na^{t}Fe_3^{t}[S_5(H_2O)_2\square]^{n}$ (Subs.defecf d.Wurtzite)	Tric. P1 ...	a=7.409Å α=100°25' b=9.881Å β=104°37' c=6.441Å γ=81°29' Z=2			Am.Min.,1983,68,245-254; Hölzel,26;K/S,166.
CUPROTUNGSTITE	$Cu_3(WO_4)_2.2H_2O$	$Cu_3^{o}W_2^{t}[O_8(H_2O)_2]$ (≈Lindgrenite)	Tet. $P4_12_12$...	a=8.93Å Z=6 ? c=14.48Å			Encyc.Miner.Nam.,75;Min. Mag.,1979,43,448450;Min. Abs.,88M/6059;Pov.,571.
CUZTICITE	$Fe_2TeO_6.3H_2O$		Hex. ?	a=5.045Å Z=2 c=10.63Å			Min.Abs.,1983,68,471(Abs.); Hölzel,135.
CYMRITE	$Ba(Si,Al)_4O_8.H_2O$	$Ba^{[9]}\{2\infty\}[(Si,Al)_4^{t}O_8(H_2O)]$	Mon. $P2_1$	a=5.33Å β=90° b=36.6Å Z=8? c=7.67Å			Sov.Phys.Cryst.,1975,20,171-175;Pov.,350;SR,41A,381-382; Am.Min.,1964,49,158-165; RRW,160; Hölzel,237
DACHIARDITE	$(Na,K,Ca_{0.5})_4(Al_4Si_{20})O_{48}.18H_2O$	$(Na,K,Ca_{0.5})_4(H_2O)_{18}3\infty\}[Al_4^{t}Si_{20}^{t}O_{48}]$ (Zeolite)	Mon. C2/m	a=18.676Å β=107.87° b=7.518Å Z=1 ? c=10.246Å	$(Al,Si)_{I\text{-}IV}$(8j) $(Al,Si)_{V\text{-}VI}$(4i) (v.occ.)		Zeit.Krist.,1984,166,63-71; Pov.,358;Str.Tab.,488;RRW, 162;SR,28,251-254.
DIOPTASE	$CuSiO_3.H_2O$	$Cu_6^{[4+2]}[[H_2O]_6\{g\}[Si_6^{t}O_{18}]]$	Trig. R $\bar{3}$	a=14.566Å a_R=8.85Å c=7.778Å α=111°52' Z=3 Z_R=1 (ref.str.formula)	Cu(18f) Si(18f) $O_{I\text{-}III}$(18f) ...		Am.Min.,1977,62,807-811;LF, 196;SR,16,348-349,19,465-466;Pov.,378-379;Zeit.Krist., 1989,187,15-23.
DWORNIKITE	$(Ni,Fe)SO_4.H_2O$	$3\infty[(Ni,Fe)^{o}(H_2O)S^{t}O_4]$ (=Kieserite)	Mon. C2/c	a=6.839Å β=117.85° b=7.582Å Z=4 c=7.474Å			Am.Min.,1983,68,642(Abs.); Min.Abs.,82M-4667;LF,277; Hölzel,126.
EMMONSITE	$Fe_2(TeO_3)_3.2H_2O$	$Fe_2^{o}Te_3^{[5by]}[O_9(H_2O)_2]$ (≈Mackayite)	Tric. P $\bar{1}$	a=7.90Å α=96.7° b=8.00Å β=95.0° c=7.62Å γ=84.5° Z=2			SR,39A,323;Pov.,567;Str.Tab., 228,RRW,189;Hölzel,93.
EPSOMITE	$MgSO_4.7H_2O$	$Mg^{o}S^{t}[O_4(H_2O)_7]$	Orth. $P2_12_12_1$	a=11.868Å Z=4 b=11.996Å c=6.857Å	Mg(4a) S(4a) $O_{I\text{-}IV}$(4a) $O(w)_{I\text{-}VII}$(4a) ...		Acta Cryst.,1964,17,1361-1369;LF,313;Acta Cryst.,1984, B40,218-222;Pov.,592.
ERDITE	$NaFeS_2.2H_2O$	$Na^{[6]}Fe^{t}[S_2(H_2O)_2]$	Mon. C2/c ...	a=10.693Å β=92.17° b=9.115Å Z=4 c=5.507Å	Na(4e) Fe(4e) S(8f) O(8f)		Am.Min.,1980,65,516-521,509-515;SR,46A,298.
ERYTHRITE	$Co_3(AsO_4)_2.8H_2O$	$Co_3^{o}As_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.251Å β=104.98° b=13.447Å Z=2 c=4.764Å	Co_I(2a) Co_{II}(4g) As(4i) $O_{I\text{-}II}$(4i) ...		Eur.J.Min.,1996,8,187-192; Pov.,523;LF,307;RRW,196; Str.Tab.,335.
ERYTHROSIDERITE	$K_2FeCl_5.H_2O$	$Fe^{o}[Cl_5K_2(H_2O)]$	Orth. Pnma	a=13.75Å Z=4 b=9.92Å c=6.73Å	Fe(4c) $Cl_{I\text{-}III}$(4c) Cl_{IV}(8d) K(8d) H_2O(4c)		SR,11.419-420;Pov.,641-642; Str.Tab.164;RRW,196.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
FERRIERITE - (orthorhombic)	$(Mg,K,Ca)_{4.4}$ $(Si,Al)_{36}O_{72}.18H_2O$	$(Mg,K,Ca)_{4.4}^{o}(H_2O)_{18}$ $\{3\infty\}[(Si,Al)_{36}^{t}O_{72}]$ (≈Mordenite,Zeolite)	Orth. Pnnm	a=19.231Å Z=1 b=14.145Å c=7.499Å	Mg(2c) K(4e) v.occ. $(Si,Al)_{I}$(4e) $(Si,Al)_{II-III}$(4g) $(Si,Al)_{IV}$(8h) ...		Zeit.Krist.,1987,178,249-256; Min.Mag.,1986,50,63-68;Pov., 355;Str.Tab.,488;LF,297;RRW, 209.
FERRIMOLYBDI-TE	$Fe_2(MoO_4)_3.7H_2O$		Orth. Pmmn	a=6.665Å Z=8 b=15.423Å c=29.901Å			Hölzel suppl.;Am.Min.,1963, 48,14-32;Pov.,570;Str.Tab., 302;RRW,209;
FERRITUNGSTITE	$(K,Ca)_{0.2}(W,Fe)_2$ $(O,OH)_6.H_2O$	$(K,Ca)_{0.2}^{cb}\square_{0.8}^{cb}$ $(W,Fe)_2^{[6]}$ $[(O,OH)_6(H_2O)\square]^{Qs}$ (Defect.d.Pyrochlore)	Cub. Fd $\bar{3}$m	a=10.352Å Z=8	(Ca,K)(16d) (W,Fe)(16c) O(48f) H_2O(8b)		Can.Min.,1994,32,567-574; Pov.,570;Str.Tab.,302;RRW, 211;LF,140.
FERROHEXA-HYDRITE	$FeSO_4.6H_2O$	$Fe^{o}S^{t}[O_4(H_2O)_6]$	Mon. C2/c	a=10.08Å β=98°30' b=7.28Å Z=8 c=24.59Å			Hölzel,127;RRW,211;Am.Min., 1963,48, 433(Abs.);Pov.,591-592;Str.Tab.,282.
FERVANITE	$Fe_4(VO_4)_4.5H_2O$		Mon. ?	a=9.02Å β=103°20' b=?Å Z=? c=6.65Å			Str.Tab.,330;Pov.,500;Hölzel, 161;Am.Min.,1990,75,508-521; Am.Min.,1959,44,322-341.
FRANCONITE	$Na_2Nb_4O_{11}.9H_2O$		Mon. ?	a=22.22Å β=92.24° b=12.857Å Z=4 c=6.359Å			Am.Min.,1985,70,436-437 (Abs.); Hölzel,86.
GEARKSUTITE	$CaAl(F,OH)_5.H_2O$		?	?			RRW,231;Pov.,653;Str.Tab., 161;Hölzel,54.
GERASIMOVSKI-TE	$(Mn,Ca)(Nb,Ti)_5$ $O_{12}.9H_2O$		Amorph.	?			RRW,234;Am.Min.,1958,43, 1220-1221;Pov.,333;Str.Tab., 199;Hölzel,85.
GERSTLEYITE	$Na_2(Sb,As)_8S_{13}.$ $2H_2O$	$Na_2^{[4+2]}$ $\{1\infty\}[(Sb,As)_8^{[3n]}$ $S_{13}(H_2O)_2]$	Mon. Cm	a=9.911Å β=127.85° b=23.05Å Z=2 c=7.097Å			Min.Abs.,82M/1149;RRW,235; Pov.,266;Hölzel,47.
GILALITE	$Cu_5Si_6O_{17}.7H_2O$		Mon. ?	a=13.38Å β≈90° b=19.16Å Z=1 c=9.026Å			Am.Min.,1980,65,1065(Abs.); Hölzel,210;Min.Mag.,1980,43, 639-641.
GINORITE	$Ca_2B_{14}O_{23}.8H_2O$		Mon. $P2_1/a$	a=12.74Å β=100°46' b=14.36Å Z=4 c=12.82Å			Pov.,480;Hölzel,119;Str.Tab., 260;RRW,237.
GONNARDITE	$(Na,Ca)_2(Si,Al)_5$ $O_{10}.3H_2O$	$(Na,Ca)_2^{o}(H_2O)_3$ $\{3\infty\}[(Si,Al)_5^{t}O_{10}]$ (≈Natrolite,Zeolite)	Tet. ?	a=13.35Å Z=2 b=13.35Å c=6.65Å			Pov.,355;Gottardi & Galli, 1985,71-75;RRW,242;Str.Tab. 487; Min.Mag.,1988,52,207-219;LF,289.
GOSLARITE	$ZnSO_4.7H_2O$	$Zn^{o}S^{t}[O_4(H_2O)_7]$ (=Epsomite)	Orth. $P2_12_12_1$	a=11.87Å Z=4 b=12.11Å c=6.84Å			Pov.,592;Str.Tab.,283;RRW, 243;Hölzel,127.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
GRAEMITE	$CuTeO_3.H_2O$		Orth. Pcmm	a=6.805Å Z=10 b=25.613Å c=5.780Å			Am.Min.,1975,60,486(Abs.); Hölzel,93.
GUNNINGITE	$(Zn,Mn)SO_4.H_2O$	$\{3\infty\}[(Zn,Mn)^{o}S^{t}O_4(H_2O)]$	Mon. A2/a	a=7.566Å β=115°56' b=7.586Å Z=4 c=6.954Å		Dist.deriv. $\{3\infty\}[Mg^{o}S^{t}O_4(H_2O)]$ KIESERITE	RRW,252;Pov.,590;Str.Tab., 280;Hölzel,126;Zeit.Krist., 1998,213,141-150.
GYPSUM	$CaSO_4.2H_2O$	$2\infty[Ca^{[6+2]}(H_2O)_2S^{t}O_4]$	Mon. I 2/a	a=5.679Å β=118.43° b=15.202Å Z=4 c=6.522Å	Ca(4e) S(4e) O_{I-III}(8f) H_{I-II}(8f)	$2\infty[Ca^{[6+2]}(H_2O)_2S^{t}O_4]$ GYPSUM	Acta Cryst.,1982,B38,1074-1077;LF,248;RRW,253;Pov., 605-606;Str.Tab.,SR,22,449-450.
HANNEBACHITE	$CaSO_3.0.5H_2O$		Orth. Pbna	a=6.473Å Z=8 b=9.782Å c=10.646Å			Am.Min.,1988,73,928(Abs.); Hölzel,92.
HELLYERITE	$NiCO_3.6H_2O$		Mon. C2/c	?			Encyc.Miner.Nam.,127;RRW, 265; Am.Min.,1959,44,533-538; Pov.,617;Str.Tab.,244.
HENDERSONITE	$Ca_2V_9O_{24}.8H_2O$		Orth. Pnam ...	a=12.40Å Z=4 b=18.92Å c=10.77Å			Am.Min.,1962,47,1252-1272; Am.Min.,1990,75,508-521; Pov.,500;Str.Tab.,223;RRW, 268;Hölzel,88.
HEWETTITE	$CaV_6O_{16}.9H_2O$	$Ca^{[7/8]}V_6^{o}[O_{16}(H_2O)_9]$	Mon. $P2_1/m$	a=12.290Å β=97.24° b=3.590Å Z=1 c=11.174Å	Ca(2e)(occ.1/2) O_{I-VIII}(2e) V_{I-III}(2e)...		Can.Min.,1989,27,181-188; Pov.,500-501;Str.Tab.,223; RRW,272;Hölzel,88.
HEXAHYDRITE	$MgSO_4.6H_2O$	$Mg^{o}S^{t}[O_4(H_2O)_6]$	Mon. C2/c	a=10.110Å β=98.30° b=7.212Å Z=8 c=21.41Å	Mg_I(4a) Mg_{II}(4e) S(8f) O_{I-X}(8f) ...		Acta Cryst.,1964,17,235-242; Pov.,591-592;Str.Tab.,282; RRW,272;Hölzel,127.
HEXAHYDRO-BORITE	$Ca(B(OH)_4)_2.2H_2O$	$Ca^{[8]}B_2^{t}[(OH)_8(H_2O)_2]$	Mon. P2/a	a=8.006Å β=104.21° b=6.649Å Z=2 c=8.012Å	Ca(2e) B(4g) O_{I-V}(4g)		Am.Min.,1978,63,1283(Abs.); Acta Cryst.,1971,B27,1532-1541;Hölzel,113.
HILLEBRANDITE	$Ca_2SiO_4.H_2O$		(Orth.) $Cmc2_1$	a=3.6389Å Z=6 b=16.311Å (for SiO_3...) c=11.829Å	Ca_{I-III}(4a) Si_I(8b) Si_{II}(4a)(1/2occ.) ...		Am.Min.,1995,80,841-844; Pov.,417-418;Str.Tab.,378; RRW,274;Hölzel,191;LF,214.
HOCHELAGAITE	$(Ca,Na,Sr)Nb_4O_{11}.8H_2O$		Mon. ?	a=19.88Å β=93.20° b=12.83Å Z=4 c=6.44Å			Can.Min.,1986,24,449-453; Hölzel,86.
HOPEITE	$Zn_3(PO_4)_2.4H_2O$	$Zn^{o}Zn_2^{t}P_2^{t}[O_8(H_2O)_4]$ (≈Vivianite)	Orth. Pnma	a=10.597Å Z=4 b=18.318Å c=5.031Å	Zn_I(4c) Zn_{II}(8d) P(8d) O_{I-II}(4c) $O_{III-VII}$(8d)		Am.Min.,1976,61,987-995; RRW,279;Pov.,532-533;Str. Tab.,333;Hölzel,159.
HÖRNESITE	$Mg_3(AsO_4)_2.8H_2O$	$Mg_3^{o}As_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.26Å β=104.9° b=13.44Å Z=2 c=4.74Å			Am.Min.,1967,52,1588(Abs.); Pov.,523;Str.Tab.,335;Hölzel, 160;LF,307.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
HYDROTUNGSTITE	$WO_2(OH)_2.H_2O$	$W^{o}[O_2(OH)_2(H_2O)]$	Mon. P2/m	a=7.45Å β=90° b=6.92Å Z=2 c=3.72Å			Pov.,320;Str.Tab.,224;RRW, 292;Hölzel,81.
IKAITE	$CaCO_3.6H_2O$	$Ca^{[8]}(H_2O)_6$ {g}$[C^{tr}O_3]$	Mon. C2/c	a=8.792Å β=110.53° b=8.310Å Z=4 c=11.021Å	Ca(4e) C(4e) O_I(4e) O_{II-V}(8f) ...		Zeit.Krist.,1983,163,227-231; RRW,297;Pov.,618;Str.Tab., 245;Am.Min.,1964,49,439; Hölzel,104.
ILESITE	$(Mn,Zn,Fe)SO_4.4H_2O$	$(Mn,Zn,Fe)^{o}S^{t}[O_4(H_2O)_4]$	Mon. $P2_1/n$	a=5.94Å β=90°47' b=13.76Å Z=4 c=8.01Å	Fe(4e) S(4e) O_{I-IV}(4e) O_{V-VIII}(4e)...		Pov.,602;Str.Tab.,281;RRW, 297;Acta Cryst.,1962,15,815-826;Hölzel,126.
JOKOKUITE	$MnSO_4.5H_2O$		Tric. $P\bar{1}$	a=6.37Å α=98°46' b=10.77Å β=109°58' c=6.13Å γ=77°50' Z=2			Am.Min.,1979,64,655(Abs.); Hölzel,127.
KAATIALAITE	$FeAs_3O_9.6\text{-}8H_2O$		Mon. $P2_1$ ...	a=15.363Å β=91.77° b=19.844Å Z=4 c=4.736Å			Am.Min.,1984,69,383-387; Hölzel,164.
KANKITE	$FeAsO_4.3.5H_2O$		Mon. ?	a=18.803Å β=92.71° b=17.490Å Z=16 c=7.633Å			Am.Min.,1977,62,594(Abs.); Am.Min.,1985,70,220(Abs.); Hölzel,161.
KIESERITE	$MgSO_4.H_2O$	{3∞}$[Mg^{o}S^{t}O_4(H_2O)]$	Mon. C2/c	a=6.88Å β=117°43' b=7.61Å Z=4 c=7.63Å	Mg(4b) S(4e) O_I(4e) O_{II-III}(8f)	{3∞}$[Mg^{o}S^{t}O_4(H_2O)]$ KIESERITE	SR,21,361-362;Hölzel,126; RRW,324;Pov.,590;Str.Tab., 280;LF,277;Zeit.Krist.,1998, 213,141-150.
KILLALAITE	$Ca_3Si_2O_7.H_2O$	$Ca_2{}^{o}Ca^{[7]}Si_2{}^{t}[O_7(H_2O)]$	Mon. $P2_1/m$	a=6.807Å β=97.76° b=15.459Å Z=4 c=6.811Å	$Ca_{I-II}{}^{o}$(4f) $Ca_{III}{}^{o}$(2e) $Ca_{I-II}{}^{[7]}$(2e) Si_{I-II}(4f) (v. occ.) ...		Min.Mag.,1977,41,363-369; SR,43A,316-317;Min.Mag., 1974,39,544-548;Hölzel,199.
KLEINITE	$Hg_2N(Cl,SO_4).nH_2O$	$(Cl,SO_4)n(H_2O)$ {3∞}$[N^{t}Hg_2{}^{[2]*ch*}]^{h}$ (≈ β-Tridymite)	Hex. $P6_3/mmc$	a=13.56Å Z=24 c=11.13Å			Pov.,201;Str.Tab.,166;RRW, 326;LF,258;Am.Min.,1978,63, 316-325;Hölzel,55.
KOLBECKITE	$ScPO_4.2H_2O$	$(H_2O)_2$ {3∞}$[Sc^{o}P^{t}O_4]$	Mon. $P2_1/m$	a=5.45Å β=90°45' b=10.25Å Z=4 c=8.93Å		Dist.deriv. $(H_2O)_2$ {3∞}$[Al^{o}P^{t}O_4]$ VARISCITE	Pov.,531-532;Str.Tab.,331; RRW,329;Hölzel,161;LF,282; Am.Min.,1960,45,257(Abs.).
KONINCKITE	$FePO_4.3H_2O$	$(H_2O)_3$ {3∞}$[Fe^{o}P^{t}O_4]$ (≈Scorodite)	Tet. ?	a=11.95Å Z=16 c=14.52Å			Pov.,531-532;Str.Tab.,334; Bull.Min.,1968,91,487-489; Hölzel,161;LF,282.
KORNELITE	$Fe_2(SO_4)_3.7H_2O$	(H_2O) {2∞}$[Fe_2{}^{o}S_3{}^{t}O_{12}(H_2O)_6]$	Mon. $P2_1/n$	a=14.30Å β=96.8° b=20.12Å Z=4 c=5.425Å	Fe_{I-II}(4e) S_{I-III}(4e) O_{I-XII}(4e) ...		Am.Min.,1973,58,535-539; RRW,330;Pov.,593;SR,39A, 314;Str.Tab.,284;Hölzel,128; Zeit.Krist.,1998,213,141-150.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
KORSHUNOVSKITE	$Mg_2Cl(OH)_3.3.5\text{-}4H_2O$		Tric. ?	a=8.64Å α=101.4° b=6.25Å β=103.9° c=7.42Å γ=72.7° Z=2			Am.Min.,1983,68,643(Abs.); Hölzel,53.
KÖTTIGITE	$Zn_3(AsO_4)_2.8H_2O$	$Zn_3^{o}As_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.241Å β=105.21° b=13.405Å Z=2 c=4.757Å	Zn_I(2a) Zn_{II}(4g) As(4i) ...		Am.Min.,1979,64,376-382;LF, 307;Pov.,523;SR,45A,323;Str. Tab.,335;RRW,328.
KRAUSKOPFITE	$BaSi_2O_5.3H_2O$	$Ba^{[9]}\{1\infty\}[Si_2^{t}O_5(H_2O)_3]$	Mon. $P2_1/c$	a=7.837Å β=94°32' b=10.622Å Z=4 c=8.460Å	Ba(4e) $Si_{I\text{-}II}$(4e) $O_{I\text{-}VIII}$(4e) $H_{I\text{-}VI}$(4e)		SR,32A,459-460;Am.Min., 1965,50,314-340;RRW,333; Pov., 422;Str.Tab.,427.
KREMERSITE	$(NH_4,K)_2FeCl_5.H_2O$	$Fe^{o}[Cl_5(NH_4,K)_2(H_2O)]$	Orth. Pnma	a=13.78Å Z=4 b=9.85Å c=7.09Å			RRW,333;Hölzel,52;Str.Tab., 164.
LANSFORDITE	$MgCO_3.5H_2O$		Mon. $P2_1/m$	a=12.48Å β=101°46' b=7.55Å Z=4 c=7.34Å			RRW,342;Pov.,617;Str.Tab., 244;Hölzel104.
LANTHANITE - - (Ce)	$(Ce,La,Nd)_2(CO_3)_3.8H_2O$	$(H_2O)_8\{2\infty\}[(Ce,La,Nd)_2^{[10]}\{g\}[C^{tr}O_3]_3]$	Orth. Pbnb	a=9.482Å Z=4 b=16.938Å c=8.965Å	La_I(4c) La_{II}(4d) C_I(4d) C_{II}(8e) ...		Am.Min.,1985,70,411-413;SR, 33A,433-435;SR,43A,236; RRW, 342;Hölzel105.
LANTHANITE - - (La)	$(La,Ce)_2(CO_3)_3.8H_2O$	$(H_2O)_8\{2\infty\}[(La,Ce)_2^{[10]}\{g\}[C^{tr}O_3]_3]$	Orth. Pbnb	a=9.504Å Z=4 b=16.943Å c=8.937Å	RE_I(4d) RE_{II}(4c) C_I(4c) C_{II}(8e) ...		Am.Min.,1977,62,,142-146;Str. Tab.,246;Pov.,618;Hölzel,105.
LANTHANITE - - (Nd)	$(Nd,La)_2(CO_3)_3.8H_2O$	$(H_2O)_8\{2\infty\}[(Nd,La)_2^{[10]}\{g\}[C^{tr}O_3]_3]$	Orth. Pbnb	a=9.476Å Z=4 b=16.940Å c=8.942Å			Am.Min.,1981,66,637-639; Hölzel,105.
LAUSENITE	$Fe_2(SO_4)_3.6H_2O$		Mon. ?	?			RRW,346;Pov.,593;Str.Tab., 284;Hölzel,128.
LUDLAMITE	$(Fe,Mg,Mn)_3(PO_4)_2.4H_2O$	$(Fe,Mg,Mn)_3^{o}P_2^{t}[O_8(H_2O)_4]$ (≈Vivianite)	Mon. $P2_1/a$	a=10.541Å β=100°25' b=4.646Å Z=2 c=9.324Å	Fe_I(2a) Fe_{II}(4e) P(4e) ...		J.Chem.Phys.,1966,44,2223-2229;RRW,366;Pov.,553;Str. Tab.,333;K/B,83-84.
MALLARDITE	$MnSO_4.7H_2O$	$Mn^{o}S^{t}[O_4(H_2O)_7]$ (≈Melanterite)	Mon. $P2_1/c$	a=14.15Å β=105°36' b=6.50Å Z=4 c=11.06Å			Min.Abs.,82M/4639;RRW,377, Pov.,592;Str.Tab.,283;Hölzel, 128.
MANDARINOITE	$Fe_2(SeO_3)_3.6H_2O$		Mon. $P2_1/c$	a=16.810Å β=98°26' b=7.880Å Z=4 c=10.019Å			Am.Min.,1985,70,440(Abs.); Am.Min.,1980,65,206(Abs.); Hölzel,92.
MANGANBELY-ANKINITE	$(Mn,Ca)(Ti,Nb)_5O_{12}.9H_2O$		Amorph.	?			Am.Min.,1958,43,1220-1221 (Abs.);Pov.,458.
MANGANESE-HÖRNESITE	$(Mn,Mg)_3(AsO_4)_2.8H_2O$	$(Mn,Mg)_3^{o}As_2^{t}[O_8(H_2O)_8]$ (Dist.d.Vivianite)	Mon. $P2_1/c$	a=10.38Å β=105°40' b=28.09Å Z=4 c=4.77Å			Pov.,523;RRW,378-379; Hölzel,160.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MANJIROITE	$(Na,K)Mn_8O_{16}.nH_2O$	$Mn_8^{o}[(Na,K)O_{16}(H_2O)_n]^{chh}$	Tet. I 4/m	a=9.916Å Z=1 c=2.864Å		$Mn_8^{o}[(Ba,K)O_{16}]^{chh}$ HOLLANDITE	Am.Min.,1968,53,2103(Abs.); Pov.,305;LF,107;RRW,381; Hölzel,73;Str.Tab.,200.
MANSFIELDITE	$AlAsO_4.2H_2O$	$(H_2O)_2\{3\infty\}[Al^{o}As^{t}O_4]$	Orth. Pcab	a=10.08Å Z=8 b=9.76Å c=8.72Å		$(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ VARISCITE	RRW,381;Pov.,508;Str.Tab., 332;Hölzel,161;LF,282.
MEIXNERITE	$Mg_6Al_2(OH)_{18}.4H_2O$		Trig. $R\bar{3}m$	a=3.0463Å Z=3/8 c=22.93Å			Am.Min.,1976,61,176(Abs.); Hölzel,107.
MELANOVANADITE	$CaV_4O_{10}.5H_2O$		Tric. $P\bar{1}$	a=6.360Å α=110.18° b=18.090Å β=101.62° c=6.276Å γ=82.86° Z=4 ?	$Ca_{I-II}(2i)$ $V_{I-VI}(2i)$ ...		Am.Min.,1987,72,637-644; Pov.,501;Str.Tab.,222;RRW, 389;Hölzel,88.
MELANTERITE	$FeSO_4.7H_2O$	$Fe^{o}S^{t}[O_4(H_2O)_7]$	Mon. $P2_1/c$	a=14.072Å β=105°34' b=6.503Å Z=4 c=11.041Å	$Fe_I(2a)$ $Fe_{II}(2d)$ S(4e) ...		Acta Cryst.,1964,17,1167-1174;SR,29,351-352;LF,314; RRW,390;Pov.,592-593.
META-ALUNOGEN	$Al_2(SO_4)_3.14H_2O$		Orth. ?	a=12.25Å Z=? b=13.95Å c=15.95Å			JCPDS,22-23;Pov.,606; Hölzel,128;RRW,395;Str.Tab., 284.
METACALCIOURANOITE	$(Ca,Na,Ba)U_2O_7.2H_2O$		?	?			Am.Min.,1973,58,1111(Abs.); Hölzel,89.
METAHEWETTITE	$CaV_6O_{16}.3H_2O$	$Ca^{o}V_6^{[5by]}[O_{16}(H_2O)_3]$ (≈Barnesite)	Mon. A2/m	a=12.15Å β=118°2' b=3.607Å Z=2 c=18.44Å			Min.Mag.,1979,43,550;Pov., 500-501;Str.Tab.,223;SR,27, 589-590; Hölzel,88;RRW,397.
METAKÖTTIGITE	$(Zn,Fe)_3(AsO_4)_2.8(H_2O,OH)$	$(Zn,Fe)_3^{o}As_2^{t}[O_8(H_2O,OH)_8]$ (≈Symplesite)	Tric. $P\bar{1}$ ...	a=7.96Å α=95.6° b=9.44Å β=97.0° c=4.72Å γ=107.8° Z=?			Am.Min.,1983,68,1039(Abs.); Hölzel,160.
METAROSSITE	$Ca(VO_3)_2.2H_2O$	$Ca^{acb}V_2^{[5by]}[O_6(H_2O)_2]$	Tric. $P\bar{1}$ ...	a=6.21Å α=92°58' b=7.06Å β=96°39' c=7.76Å γ=105°47' Z=2	Ca(2i) $V_{I-II}(2i)$ $O_{I-VIII}(2i)$		SR,24,445-446;Pov.,499-500; Str.Tab.,222;RRW,398;Hölzel, 88.
METASCHODERITE	$Al(PO_4,VO_4).3H_2O$		Mon. P2/m	a=11.4Å β=79° b=14.9Å Z=8 c=9.2Å			Am.Min.,1962,47,637-648; RRW,399;Pov.,496;Str.Tab., 334;Hölzel,161.
METASWITZERITE	$(Mn,Fe)_3(PO_4)_2.4H_2O$	$(Mn,Fe)_3^{o}P_2^{t}[O_8(H_2O)_4]$ (≈Ludlamite)	Mon. $P2_1/c$	a=8.496Å β=96.65° b=13.173Å Z=8 c=17.214Å			Min.Abs.,81-1248;K/B,85-87; Am.Min.,1967,52,1595-1602; Am.Min.,1986,71,1221-1223.
METAVANDENRIESSCHEITE	$PbU_7O_{22}.nH_2O$		Orth. Pmma ?	a=14.07Å Z=? b=41.31Å c=43.33Å	Al(4e) P(4e) $O_{I-IV}(4e)$ $H_2O_{I-II}(4e)$		Am.Min.,1960,45,1026-1061; Pov.,749,327;Str.Tab.,553, 225;Hölzel,90.

Table 184

$A_pB_qC_r.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
METAVARISCITE	$AlPO_4.2H_2O$	$(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$	Mon. $P2_1/n$	a=5.178Å β=90.35° b=9.514Å Z=4 c=8.454Å	Al(4e) P(4e) $O_{I\text{-}IV}$(4e) $H_2O_{I\text{-}II}$(4e) ...	Dist.deriv. $(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ VARISCITE	Acta Cryst.,1973,B29,2292-2294;SR,31A,185-187;SR, 39A,285-286LF,282;RRW,402.
MIRABILITE	$Na_2SO_4.10H_2O$	$Na_2^{o}S^{t}[O_4(H_2O)_{10}]$	Mon. $P2_1/c$	a=11.512Å β=107.789° b=10.370Å Z=4 c=12.847Å	$Na_{I\text{-}II}$(4e) S(4e) ...		Acta Cryst.,1978,B34,3502-3510;Pov.,593;Str.Tab.,291; RRW,408-409;LF,318.
MITSCHERLICHITE	$K_2CuCl_4.2H_2O$	$Cu^{o}[K_2^{cb}Cl_4(H_2O)_2]$	Tet. $P4_2/mnm$	a=7.46Å Z=2 c=7.90Å			Pov.,642;Str.Tab.,163;RRW, 410;Hölzel,52.
MONOHYDRO-CALCITE	$CaCO_3.H_2O$		Trig. $P3_121$ ...	a=10.62Å Z=9 c=7.54Å			Sov.Phys.Cryst.,1964,9,88-90; Am.Min.,1964,49,1151(Abs.); Am.Min.,1973,58,1102(Abs.); Pov.,618;RRW,415.
MOORHOUSEITE	$(Co,Ni,Mn)SO_4.6H_2O$	$(Co,Ni,Mn)^{o}S^{t}[O_4(H_2O)_6]$ (=Hexahydrite)	Mon. C2/c	a=10.032Å β=98.37° b=7.233Å Z=8 c=24.261Å	Co_I(4a) Co_{II}(4e) S(8f) $O_{I\text{-}X}$(8f)		Acta Cryst.,1962,15,1219-1224;RRW,418;Pov.,591-592; Str.Tab.,282.
MORENOSITE	$NiSO_4.7H_2O$	$Ni^{o}S^{t}[O_4(H_2O)_7]$ (=Epsomite)	Orth. $P2_12_12_1$	a=11.86Å Z=4 b=12.08Å c=6.81Å			RRW,419;Pov.,592;Str.Tab., 283;Min.Mag.,1964,33,1110-1113;LF,313.
MOUNTAINITE	$(Ca,Na_2,K_2)_2Si_4O_{10}.3H_2O$	$(Ca,Na_2,K_2)_2^{[6]}(H_2O)_3\{2\infty\}[Si_4^{t}O_{10}]$	Mon. P2/c	a=13.51Å β=104° b=13.10Å Z=8 c=13.51Å			Enc.Min.Nam.,205;RRW,422; Pov.,434;Str.Tab.,487;Hölzel, 246.
MUNIRITE	$NaVO_3.1.9H_2O$		Mon. $P2_1/a$	a=16.756Å β=111.18° b=3.6391Å Z=4 c=8.023Å			Min.Mag.,1988,52,716-717. SR,44A,201;Min.Abs.,89-928; Am.Min.,1984,69,812(Abs.);
MUSKOXITE	$Mg_7Fe_4O_{13}.10H_2O$		Trig. ?	a=3.1Å Z= ? c=24.113Å ?			Am.Min.,1969,54,684-696; RRW,424;Pov.,333;Hölzel,83, suppl..
NATRON	$Na_2CO_3.10H_2O$	$[\{g\}[Na_2^{o}(H_2O)_{10}]\{g\}[C^{tr}O_3]^{o}]$	Mon. Cc	a=12.83Å β=123.0° b=9.026Å Z=4 c=13.44Å	$Na_{I\text{-}II}$(4a) C(4a) $O_{I\text{-}X}$(4a) ...	$[\{g\}[Na_2^{o}(H_2O)_{10}]\{g\}[C^{tr}O_3]^{c}]$ NATRON	Acta Cryst.,1969,B25,2656-2658;LF,188;RRW,429;Pov., 618;Str.Tab.,245.
NEKOITE	$Ca_3Si_6O_{15}.7H_2O$	$Ca_3^{o}(H_2O)_7\{2\infty\}[Si_6^{t}O_{15}]$	Tric. P1	a=7.588Å α=111.77° b=9.793Å β=103.50° c=7.339Å γ=86.53° Z=1	$Ca_{I\text{-}III}$(1a) $Si_{I\text{-}VI}$(1a) $O_{I\text{-}XV}$(1a) ...		Am.Min.,1980,65,1270-1276; Pov.,434-435,153;Str.Tab., 424;RRW,432;SR,46A,389.
NEOTOCITE	$(Mn,Fe)SiO_3.H_2O$		Amorph.				Min.Abs.,83-2626;Min.Mag., 1978,42,279-280;RRW,432-433;Hölzel,222.
NESQUEHONITE	$MgCO_3.3H_2O$	$Mg^{o}(H_2O)_3\{g\}[C^{tr}O_3]$	Mon. $P2_1/n$	a=7.705Å β=90.45° b=5.367Å Z=4 c=12.121Å	Mg(4e) C(4e) $O_{I\text{-}VI}$(4e)		Acta Cryst.,1972,B28,1031-1033;SR,38A,298-299;Pov., 617-618;Str.Tab.,244;RRW, 433.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
NICKELHEXA-HYDRITE	$(Ni,Mg,Fe)SO_4.6H_2O$	$(Ni,Mg,Fe)^{o}S^{t}[O_4(H_2O)_6]$ (=Hexahydrite)	Mon. C2/c	a=9.880Å β=98.38° b=7.228Å Z=8 c=24.130Å	Ni_{I}(4a) Ni_{II}(4e) S(8f) O_{I-X}(8f) ...		Acta Cryst.,1988,C44,1869-1873;Pov.,591-592;Str.Tab., 282;RRW;435.
NINGYOITE	$(U,Ca,Ce)_2(PO_4)_2.1\text{-}2H_2O$		Orth. P222 ...	a=6.78Å Z=3 b=12.10Å c=6.38Å			Am.Min.,1959,44,633-650; RRW,437;Pov.,546;Str.Tab., 314.
NITROCALCITE	$Ca(NO_3)_2.4H_2O$		Mon. $P2_1/c$	a=6.278Å β=106.22° b=9.1551Å Z=4 c=14.8999Å	Ca(4e) N_{I-II}(4e) O_{I-VI}(4e) ...		Acta Cryst.,1977,B33,1861-1866;RRW,439;Hölzel,96.
NITROMAGNESI-TE	$Mg(NO_3)_2.6H_2O$	$Mg^{o}(H_2O)_6\{g\}[N^{tr}O_3]_2$	Mon. $P2_1/c$	a=6.194Å β=92.99° b=12.707Å Z=2 c=6.600Å			Acta Cryst.,1961,14,1296-1297;Pov.,633-634;RRW,439.
OKENITE	$Ca_{10}Si_{18}O_{46}.18H_2O$	$Ca_{10}^{o}(H_2O)_{18}O\{2\infty\}[Si_6^{t}O_{15}]_3$ (≈Nekoite)	Tric. P $\bar{1}$	a=9.69Å α=92.7° b=7.28Å β=100.1° c=22.02Å γ=110.9° Z=1	Ca_{I-IV}(2i) Ca_{V-VI}(2i) (½ occ.) Si_{I-IX}(2i) ...		Am.Min.,1983,68,614-622; Pov.,434;Str.Tab.,424;Hölzel, 220.
ORICKITE	$CuFeS_2.nH_2O$		Hex. ?	a=3.695Å Z=4 c=6.16Å			Am.Min.,1983,68,245-254; Hölzel,26.
PARACOQUIMBI-TE	$Fe_2(SO_4)_3.9H_2O$	$Fe_2^{o}S_3^{t}[O_{12}(H_2O)_9]$	Trig. R $\bar{3}$	a=10.926Å Z=12 c=51.300Å	Fe_{I}(3a) Fe_{II}(3b) Fe_{III-V}(6c) S_{I-II}(18f) ... (rh. descrip.)		Am.Min.,1971,56,1567-1572; SR,37A,309;Pov.,593;Str.Tab., 284;RRW,458-459.
PARAHOPEITE	$Zn_3(PO_4)_2.4H_2O$	$Zn^{o}Zn_2^{t}P_2^{t}[O_8(H_2O)_4]$ (Dist.d.Hopeite)	Tric. P $\bar{1}$	a=5.757Å α=93°32' b=7.534Å β=91°18' c=5.625Å γ=91°33' Z=1	Zn_{I}(1a) Zn_{II}(2i) P(2i) O_{I-IV}(2i) ...		Min.Mag.,1968,36,621-624; Pov.,532-533;Str.Tab.,333;SR, 33A,395;SR,41A,425.
PARASYMPLESI-TE	$Fe_3(AsO_4)_2.8H_2O$	$Fe_3^{o}As_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.25Å β=103°50' b=13.48Å Z=2 c=4.71Å			Pov.,753,523;LF,307;Wyckoff, 3,852-854;RRW,463;Str.Tab., 335.
PASCOITE	$Ca_3V_{10}O_{28}.17H_2O$	$Ca_3^{[7]}V_{10}^{o}[O_{28}(H_2O)_{17}]$	Mon. I 2 ...	a=16.834Å β=93°8' b=10.156Å Z=2 c=10.921Å	Ca_{I}(2a) Ca_{II}(4c) ...		Acta Cryst.,1966,21,397-405; SR,31A,142-143;Pov.,502;Str. Tab.,221;Hölzel,88.
PAULINGITE	$(K,Ca,Na,Ba)_{12}(Si,Al)_{24}O_{48}.25H_2O$	$(K,Ca,Na,Ba)_{12}(H_2O)_{25}\{3\infty\}[(Si,Al)_{24}^{t}O_{48}]$ (≈Sodalite,Zeolite)	Cub. I m3m	a=35.093Å Z=28	$(Si,Al)_{I-II}$(48i) $(Si,Al)_{III-VIII}$(96l) ...		SR,50A,333-334.Am.Min., 1960,45,79-91;Am.Min.,1982, 67,799-803;Pov.,353.
PENTAHYDRITE	$MgSO_4.5H_2O$	$Mg^{o}S^{t}[O_4(H_2O)_5]$ (≈Chalcanthite)	Tric. P $\bar{1}$	a=6.314Å α=81°7' b=10.505Å β=109°49' c=6.030Å γ=105°5' Z=2	Mg_{I}(1a) Mg_{II}(1e) Si(2i) O_{I-IV}(2i) ...		Acta Cryst.,1972,B28,1448-1455;Pov.,591;Str.Tab.,281; RRW,471;LF,317.

Table 186 $A_pB_qC_r.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
PHAUNOUXITE	$Ca_3(AsO_4)_2.11H_2O$	$\{2\infty\}[Ca^{[8]}Ca_2^{[7]}As_2^{t}O_8(H_2O)_{11}]$ (≈Rauenthalite)	Tric. $P\bar{1}$	a=12.563Å α=88.94° b=12.181Å β=91.67° c=6.205Å γ=113.44° Z=2	$Ca_{I\text{-}III}(2i)$ $As_{I\text{-}II}(2i)$ $O_{I\text{-}VIII}(2i)$ ...		Acta Cryst.,1983,B39,4-10;Am. Min.,1983,68,850(Abs.); Hölzel,165.
PHOSPHOFERRI-TE	$(Fe,Mn)_3(PO_4)_2.3H_2O$	$(Fe,Mn)_3^{o}P_2^{t}[O_8(H_2O)_3]$ (≈Reddingite)	Orth. Pbna	a=9.460Å b=10.024Å c=8.670Å Z=4			SR,42A,346-347;Min.Mag., 1980,43,789-795;Pov.,547;Str. Tab.,331;RRW,477.
PHOSPHOSIDERI-TE	$FePO_4.2H_2O$	$(H_2O)_2\{3\infty\}[Fe^{o}P^{t}O_4]$ (=Metavariscite)	Mon. $P2_1/n$	a=5.30Å β=90°36' b=9.77Å Z=4 c=8.73Å	Fe(4e) P(4e) $O_{I\text{-}VI}(4e)$	Dist.deriv. $(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ VARISCITE	Am.Min.,1966,51,168-176; RRW,400;Pov.,531-532;Str. Tab.,331.
POITEVINITE	$(Cu,Fe,Zn)SO_4.H_2O$	$\{3\infty\}[(Cu,Fe,Zn)^{o}S^{t}O_4(H_2O)]$	Tric. $P\bar{1}$	a=5.120Å α=107.06° b=5.160Å β=107.40° c=7.535Å γ=92.73° Z=2	(Cu,Fe,Zn)(1a) (Cu,Fe,Zn)(1h) S(2i) ...	Dist.deriv. $\{3\infty\}[Mg^{o}S^{t}O_4(H_2O)]$ KIESERITE	Can.Min.,1994,32,873-884; RRW,486-487;Pov.,590;Str. Tab.,280;Encyc..Miner.Nam., 242.
QUENSTEDTITE	$Fe_2(SO_4)_3.11H_2O$	$Fe_2^{o}S_3^{t}[O_{12}(H_2O)_{11}]$	Tric. $P\bar{1}$	a=6.184Å α=94.18° b=23.60Å β=101.73° c=6.539Å γ=96.27° Z=2	$Fe_{I\text{-}II}(2i)$ $S_{I\text{-}III}(2i)$ $O_{I\text{-}XII}(2i)$ $(H_2O)_{I\text{-}X}(2i)$		Am.Min.,1974,59,582-586; Pov.,593;Str.Tab.,284;SR,40A, 265;RRW,505-506.
RALSTONITE	$Na_{0.4}(Al,Mg)_2(F,OH)_6.H_2O$	$(Al,Mg)_2^{cb}Na_{0.4}^{[6]}\square_{1.6}^{[6]}[(F,OH)_6(H_2O)\square]^{Oc}$ (Defect d.Pyrochlore)	Cub. $Fd\bar{3}m$	a=9.87Å Z=8	(Al,Mg)(16c) Na(16d) $(H_2O)(8b)$ (F,OH)(48f) (v.occ.)		SB,7,127-128;LF,140;RRW, 507-508;Min.Abs.,85M/0180.
RANCIÉITE	$(Ca,Mn)Mn_4O_9.3H_2O$		Hex. ?	a=2.86Å c=7.50Å Z=?			Min.Abs.,804-854;Am.Min., 1987,72,230(Abs.);Bull.Min., 1969,92,191-195; Pov.,333.
RAUENTHALITE	$Ca_3(AsO_4)_2.10H_2O$	$Ca^{[8]}Ca_2^{[7]}As_2^{t}[O_8(H_2O)_{10}]$ (≈Phaunouxite)	Tric. $P\bar{1}$	a=12.564Å α=89.09° b=12.169Å β=79.69° c=6.195Å γ=118.58° Z=2	$As_{I\text{-}II}(2i)$ $Ca_{I\text{-}III}(2i)$ $O_{I\text{-}VIII}(2i)$ $(H_2O)_{I\text{-}X}(2i)$		Acta Cryst.,1983,B39,4-10; Pov.,520;Am.Min.,1965,50,805 -806.
REDDINGITE	$Mn_3(PO_4)_2.3H_2O$	$Mn_3^{o}P_2^{t}[O_8(H_2O)_3]$ (≈Phosphoferrite)	Orth. Pbna	a=9.49Å Z=4 b=10.08Å c=8.70Å			RRW,512;Hölzel,159;Pov.,755, 547;Str.Tab.,331;Zeit.Krist., 1963,118,327-331.
RETGERSITE	α-$NiSO_4.6H_2O$	$Ni^{o}S^{t}[O_4(H_2O)_6]$ (≈Hexahydrite)	Tet. $P4_12_12$	a=6.780Å Z=4 c=18.285Å	Ni(4e) S(4e) $O_{I\text{-}V}(8g)$ ...		Acta Cryst.,1988,C44,1869-1873;RRW,514;Pov.,591;Str. Tab.,282.
REVDITE	$Na_2Si_2O_5.5H_2O$	$3\infty[Na_2^{o}Si_2^{t}O_5(H_2O)_5]$ (≈Vlasovite)	Mon. C2	a=53.83Å β=96.78° b=9.972Å Z=16 c=6.907Å	$Si_{I\text{-}VIII}(4c)$ ...		Sov.Phys.Cryst.,1992,37,632-636;Am.Min.,1982,67,1076; Hölzel,226.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
RHABDOPHANE - - (Ce)	$(Ce,La)PO_4.H_2O$	$(Ce,La)^{[8]}P^t[O_4(H_2O)]$	Hex. $P6_222$	a=6.98Å Z=3 c=6.39Å			RRW,515;Pov.,546-547;Str. Tab.,314;Am.Min.,1980,65, 1065(Abs.);Hölzel,164.
RHABDOPHANE - - (La)	$(La,Ce)PO_4.H_2O$	$(La,Ce)^{[8]}P^t[O_4(H_2O)]$	Hex. $P6_222$	a=6.960Å Z=3 c=6.372Å			Min.Mag.,1984,48,146-148; Hölzel,164.
RHABDOPHANE - - (Nd)	$(Nd,Ce,La)PO_4.H_2O$	$(Nd,Ce,La)^{[8]}P^t[O_4(H_2O)]$	Hex. $P6_222$	a≈6.98Å Z=3 c≈6.39Å			Hölzel,164;Am.Min.,1966,51, 152-158.
RICHETITE	$PbU_4O_{13}.4H_2O$		Tric. P1 ...	a=20.81Å α=103.8° b=12.06Å β=115.1° c=16.30Å γ=90.4° Z=9			Am.Min.,1985,70,1335(Abs.); Hölzel,89.
RÖMERITE	$Fe_3(SO_4)_4.14H_2O$	$[\{g\}[Fe^oS_2^tO_8(H_2O)_4]_2$ $\{g\}[Fe^o(H_2O)_6]$	Tric. $P\bar{1}$	a=6.463Å α=90°32' b=15.309Å β=101°5' c=6.341Å γ=85°44' Z=1	Fe_I(1a) Fe_{II}(2i) S_{I-II}(2i) ...		Am.Min.,1970,55,78-89;RRW, 523;Pov.,596;Str.Tab.,285;SR, 35A,439.
ROSSITE	$Ca(VO_3)_2.4H_2O$	$\{3\infty\}[Ca^{[8]}V_2^{[5]}O_6$ $(H_2O)_4]$	Tric. $P\bar{1}$	a=8.534Å α=101°32' b=8.556Å β=114°58' c=7.015Å γ=103°23' Z=2	Ca(2i) V_{I-II}(2i) O_{I-X}(2i)		SR,28,204-206;Min.Mag., 1985;49,140-141;Pov.,499-500;Str.Tab.,222;RRW,527-528.
ROZENITE	$FeSO_4.4H_2O$	$Fe^oS^t[O_4(H_2O)_4]$ (=Laumontite)	Mon. $P2_1/n$	a=5.97Å β=90°26' b=13.64Å Z=4 c=7.97Å	Fe(4e) S(4e) O_{I-VIII}(4e)		Acta Cryst.,1962,15,815-826; RRW,528;Pov.,602;Str.Tab., 281.
SCHIEFFELINITE	$Pb(Te,S)O_4.H_2O$		Orth. Cmcm	a=9.67Å Z=16 b=19.56Å c=10.47Å			Min.Mag.,1980,43,771-773; Hölzel,126.
SCHÖLLHORNITE	$Na_{0.3}CrS_2.H_2O$		Trig. R3m ...	a=3.32Å Z=? c=26.6Å			Am.Min.,1985,70,638-643; Hölzel,126.
SCHUBNELITE	$FeVO_4.H_2O$		Tric. $P\bar{1}$	a=6.59Å α=125° b=5.43Å β=104° c=6.62Å γ=84°43' Z=2			Bull.Min.,1970,93,470-475; Am.Min.,1972,57,1556-1557; Pov.,496;RRW,547.
SCORODITE	$FeAsO_4.2H_2O$	$(H_2O)_2\{3\infty\}[Fe^oAs^tO_4]$	Orth. Pcab	a=8.937Å Z=8 b=10.278Å c=9.996Å	Fe(8c) P(8c) O_{I-VI}(8c) $(H_2O)_{I-II}$(8c)	$(H_2O)_2\{3\infty\}[Al^oP^tO_4]$ VARISCITE	Acta Cryst.,1976,B32,2891-2892;LF,282;SR,12,251-252; Pov.,508;Str.Tab.,332;RRW, 548;.
SIDEROTIL	$(Fe,Cu)SO_4.5H_2O$	$(Fe,Cu)^oS^t[O_4(H_2O)_5]$ (=Chalcanthite)	Tric. $P\bar{1}$	a=6.26Å α=97°15' b=10.63Å β=109°40' c=6.06Å γ=75°0' Z=2			RRW,560;Pov.,591;Str.Tab., 281;LF,317;Hölzel,127.
SIMONKOLLEITE	$Zn_5(OH)_8Cl_2.H_2O$		Trig. $R\bar{3}m$	a=6.334Å Z=3 c=23.58Å			Am.Min.,1988,73,194-195 (Abs.);Hölzel,53.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SIMPLOTITE	$CaV_4O_9.5H_2O$		Mon. A2/m ...	a=8.39Å β=90°25' b=17.02Å Z=4 c=8.37Å			Am.Min.,1958,43,16-24;RRW, 562;Pov.,328,602;Str.Tab., 221; Hölzel,87.
STARKEYITE	$MgSO_4.4H_2O$	$\{g\}[Mg_2^{o}S_2^{t}O_8(H_2O)_8]$	Mon. $P2_1/n$	a=5.922Å β=90°51' b=13.604Å Z=4 c=7.905Å	Mg(4e) S(4e) O_{I-IV}(4e) ...		Acta Cryst.,1964,17,863-869; RRW,577;Pov.,759,602;Str. Tab.,281;Zeit.Krist.,1998,213, 141-150.
STEIGERITE	$AlVO_4.3H_2O$		Mon. $P2_1/m$ ...	a=11.840Å β=111°10' b=25.00Å Z=2 c=11.040Å			Min.Abs.,88M-1038;Pov.,496; Str.Tab.,334;RRW,577-579; Hölzel,161;Am.Min.,1959,44, 322-341.
STERLINGHILLI-TE	$Mn_3(AsO_4)_2.4H_2O$		?	?			Am.Min.,1981,66,182-184;Str. Tab.,578;Hölzel,159.
STRACZEKITE	$(Ca,K,Ba)V_8O_{20}.3H_2O$	$V_8^{o}[O_{20}(H_2O)_3(Ca,K,Ba)]$	Mon. C2/m ...	a=11.679Å β=100.53° b=3.6608Å Z=1 c=10.636Å			Min.Mag.,1984,48,289-293; Hölzel,177;Am.Min.,1990,75, 508-521.
STRENGITE	$FePO_4.2H_2O$	$(H_2O)_2\{3\infty\}[Fe^{o}P^{t}O_4]$	Orth. Pcab	a=10.05Å Z=8 b=9.92Å c=8.74Å		$(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ VARISCITE	RRW,586;Pov.,759;Str.Tab., 332;LF,282;Hölzel,161;Can. Min.,1976,14,40-46.
SVETLOZARITE	$(Ca,K,Na)_3(Si,Al)_{24}O_{48}.12H_2O$	$(Ca,K,Na)_3(H_2O)_{12}\{3\infty\}[(Si,Al)_{24}^{t}O_{48}]$ (≈Dachiardite,Zeolite)	(Orth.) Ccma?	a=19.482Å Z=4 b=20.963Å c=7.554Å			Am.Min.,1977,62,1060(Abs.); Min.Mag.,1982,45,157-161.
SWITZERITE	$(Mn,Fe)_3(PO_4)_2.7H_2O$	$(Mn,Fe)_3^{o}P_2^{t}[O_8(H_2O)_7]$	Mon. $P2_1/a$	a=8.528Å β=110.05° b=13.166Å Z=4 c=11.812Å	Mn_{I-III}(4e) P_{I-II}(4e) O_{I-XV}(4e)		Am.Min.,1986,71,1224-1228; SR,45A,308;RRW,594;Pov., 547;Str.Tab.,333.
SYMPLESITE	$Fe_3(AsO_4)_2.8H_2O$	$Fe_3^{o}As_2^{t}[O_8(H_2O)_8]$ (=Vivianite)	Mon. C2/m	a=10.25Å β=103°50' b=13.48Å Z=2 c=4.71Å	Fe_I(2a) Fe_{II}(4g) As(4i) ...		SR,13,307-308;RRW,595; Pov.,523;Str.Tab.,335;Wyckoff, 3,852-854.
SZMIKITE	$MnSO_4.H_2O$	$\{3\infty\}[Mn^{o}S^{t}O_4(H_2O)]$	Mon. A2/a	a=7.758Åβ=115°42.5' b=7.612Å Z=4 c=7.126Å		Dist.deriv. $\{3\infty\}[Mg^{o}S^{t}O_4(H_2O)]$ KIESERITE	RRW,597;Str.Tab.,280;Hölzel, 126;Zeit.Krist.,1998,213,141-150.
SZOMOLNOKITE	$FeSO_4.H_2O$	$\{3\infty\}[Fe^{o}S^{t}O_4(H_2O)]$	Mon. A2/a	a=7.624Å β=115°52' b=7.468Å Z=4 c=7.123Å		Dist.deriv. $\{3\infty\}[Mg^{o}S^{t}O_4(H_2O)]$ KIESERITE	RRW,598;Pov.,590;Str.Tab., 280;Hölzel,126.
TACHYHYDRITE	$CaMg_2Cl_6.12H_2O$	$Ca^{o}Mg_2^{o}[Cl_6(H_2O)_{12}]$ (≈Carnallite)	Trig. $R\bar{3}$	a=10.136Å c=17.318Å Z=3	Ca(3a) Mg(6c) Cl(18f) O_{I-II}(18f)		Acta Cryst.,1980,B36,2736-2739;SR,46A,173-174;Hölzel suppl..
TAKANELITE	$(Mn,Ca)Mn_4O_9.H_2O$		Hex. ?	a=8.68Å Z=3 c=9.00Å			Am.Min.,1971,56,1487-1488 (Abs.);Pov.,760;RRW,600-601.
TEINEITE	$CuTeO_3.2H_2O$	$Cu^{[6]}Te^{[3n]}[O_3.(H_2O)_2]$ (=Chalcomenite)	Orth. $P2_12_12_1$	a=6.634Å Z=4 b=9.597Å c=7.428Å	Cu(4a) Te(4a) O_{I-V}(4a)		SR,43A,292,27,635-637;RRW, 607;Pov.,564-566;Str.Tab., 228;Min.Abs.,78-1502.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
TENGERITE - (Y)	$Y_2(CO_3)_3.2H_2O$	$2\infty[\ Y_2^{[9]}\{g\}[C^{tr}O_3]_3(H_2O)_2\ ]$ (≈Kimuraite)	Orth. $Bb2_1m$	a=6.078Å Z=4 b=9.157Å c=5.114Å	Y(4a) C_I(8b) C_{II}(4a) ...		Am.Min.,1993,78,425-432; Pov.,617;Hölzel,109;Min.Abs., 75-3580.
TERTSCHITE	$Ca_4B_{10}O_{19}.20H_2O$		Mon. ?	?			RRW,610;Pov.,483;Str.Tab., 259;Hölzel,116.
TETRANATROLITE	$(Na,K)_2(Si,Al)_5O_{10}.2H_2O$	$(Na,K)_2^{o}(H_2O)_2\{3\infty\}[(Si,Al)_5^{t}O_{10}]$ (≈Natrolite,Zeolite)	Tet. I $\bar{4}2d$	a=13.074Å Z=4 c=6.620Å	Na(16e) Si_{I-II}(16e) (v. occ.) ...		Zeit.Krist.,1989,189,191-194; Hölzel,243;Can.Min.,1980,18, 77-84.
THERMONATRITE	$Na_2CO_3.H_2O$	$Na^{[5]}Na^{[5by]}(H_2O)\{g\}[C^{tr}O_3]$	Orth. $P2_1ab$	a=6.472Å Z=4 b=10.724Å c=5.259Å	Na_{I-II}(4a) C(4a) O_{I-IV}(4a) H_{I-II}(4a)		Acta Cryst.,1975,B31,890-892; RRW,613;Pov.,618;Str.Tab., 245.
TODOROKITE	$(Na,Ca,K,Ba,Sr)_{1-x}(Mn,Mg,Al)_6O_{12}.3\text{-}4H_2O$	$(Mn,Mg,Al)_6^{o}[(Na,Ca,K,Ba,Sr)_{1-x}O_{12}(H_2O)_{3-4}]^{c/h}$ (≈Hollandite)	Mon. P2/m	a=9.764Å β=94.06° b=2.8416Å Z=1? c=9.551Å	Mn_I(1g) Mn_{II}(2h) Mn_{III}(1d) Mn_{IV}(2n) ...		Am.Min.,1988,73,861-869;LF, 107;RRW,621;Pov.,319;Str. Tab.,200;LF,107.
TRABZONITE	$Ca_4Si_3O_{10}.2H_2O$		Mon. $P2_1$ ...	a=6.895Å β=98° b=20.640Å Z=4 c=6.920Å			Am.Min.,1988,73,1497(Abs.); Hölzel, 204.
TRISTRAMITE	$(Ca,U,Fe)(PO_4,SO_4).2H_2O$	$(Ca,U,Fe)^{[8]}(P,S)^{t}[O_4(H_2O)]$ (=Rhabdophane--(Ce))	Hex. $P6_222$	a=6.913Å Z=3 c=6.422Å			Min.Mag.,1983,47,393-396; K/B,175;Hölzel,175.
URANOSPHAERITE	$Bi_2U_2O_9.3H_2O$		Orth. ?	?			Hölzel,90;Pov.,333;Str.Tab., 226.
VANDENDRIESSCHEITE	$PbU_7O_{22}.12H_2O$		Orth. Pmma ...	a=14.07Å Z=36 ? b=40.85Å c=43.33Å			Am.Min.,1960,45,1026-1061; Pov.,327;Str.Tab.,225;RRW, 647;Hölzel,90.
VARISCITE	$AlPO_4.2H_2O$	$(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$	Orth. Pbca	a=9.822Å Z=8 b=8.561Å c=9.630Å	Al(8c) P(8c) O_{I-VI}(8c)	$(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ VARISCITE	Acta Cryst.,1977,B33,263-265; LF,282;RRW,648;SR,43A,251; Pov.,531-532;Str.Tab.,331.
VIVIANITE	$Fe_3(PO_4)_2.8H_2O$	$Fe_3^{o}P_2^{t}[O_8(H_2O)_8]$	Mon. C2/m ...	a=10.113Å β=104.36° b=13.464Å Z=2 c=4.723Å			Can.Min.,1997,35,713-722;SR, 46A,327;LF,307;RRW,654; Pov.,558;K/B,66-67.
WARIKAHNITE	$Zn_3(AsO_4)_2.2H_2O$	$3\infty[\ Zn_3^{[4/5/6]}As_2^{t}O_8(H_2O)_2\ ]$	Tric. P $\bar{1}$	a=6.710Å α=105.59° b=8.989Å β=93.44° c=14.533Å γ=108.68° Z=4			SR,46A,341-342;Am.Min., 1980,65,408(Abs.);Hölzel,160.
WÖLSENDORFITE	$(Pb,Ca)U_2O_7.2H_2O$		Orth. C222	a=13.99Å Z=6 b=11.95Å c=7.02Å			Pov.,327;RRW,675;Str.Tab., 225;Hölzel,89;Am.Min.,1957, 42,919(Abs.).
WOODRUFFITE	$(Zn,Mn)Mn_3O_7.1\text{-}2H_2O$		Tet. P $\bar{4}$	a=8.42Å Z=2 c=9.28Å			Min.Mag.,1963,33,506-507; Pov.,319; RRW,676;Hölzel,74; Am.Min.,1953,38,761-769.

Table 190 $A_pB_qC_r.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ZINC- - MELANTERITE	$(Zn,Cu,Fe)SO_4.7H_2O$	$(Zn,Cu,Fe)^{o}S^{t}[O_4(H_2O)_7]$	Mon. $P2_1/c$	a=14.07Å β=105°35' b=6.50Å Z=4 c=11.04Å			Pov.,592-593;Str.Tab.,283; RRW,687;Hölzel,127.
ZIRCOSULFATE	$Zr(SO_4)_2.4H_2O$		Orth. Fddd	a=25.92Å Z=1 b=11.62Å c=5.532Å			Am.Min.,1966,51,529(Abs.); Pov.,590-591;Str.Tab.,284; RRW,690;Hölzel,128.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ACUMINITE	$SrAlF_4(OH).H_2O$	$\{3\infty\}[\ Sr^{[9]}Al^{o}F_4(OH)(H_2O)\ ]$ (≈Tikhonenkovite)	Mon. C2/c	a=13.223Å β=111.61° b=5.175Å Z=8 c=14.251Å	Sr(8f) Al(8f) O_{I-II}(8f) F_{I-IV}(8f)		Zeit.Krist.,1991,194,221-227; Am.Min.,1988,73,1492(Abs.).
AFGHANITE	$(Na,Ca,K)_8(Si,Al)_{12}O_{24}(Cl,SO_4)_3.nH_2O$	$(Na,Ca,K)_8^{[8]}(Cl,SO_4)_3(H_2O)_n$ $\{3\infty\}[(Si,Al)_{12}{}^{t}O_{24}]$ (≈Cancrinite,Zeolite)	Hex. $P6_3mc$ ...	a=12.8013Å Z=8? c=21.4119Å	Si_{I-IV}(12d) Al_{I-IV}(12d) ...		Eur.J.Min.,1997,9,21-30;Bull. Min.,1968,91,34-42;Pov.,349; Str.Tab.,482;Hölzel,240;LF, 300
AFWILLITE	$Ca_3(SiO_3)_2(OH)_2.2H_2O$	$\{2\infty\}[Ca_2^{[7]}Ca^{[6]}Si_2{}^{t}O_6(OH)_2(H_2O)_2]$ (≈Bultfonteinite)	Mon. Cc	a=16.278Å β=134.98° b=5.6321Å Z=4 c=13.236Å	Ca_{I-III}(4a) Si_{I-II}(4a) O_{I-X}(4a)		Acta Cryst.,1976,B32,475-480; SR,42A,398;Pov.,435-436;Str. Tab.,379;RRW,5.
AGRINIERITE	$(K_2,Ca,Sr)(UO_2)_3O_4.4H_2O$		Orth. Cmmm	a=14.04Å Z=16 b=24.07Å c=14.13Å			Min.Mag.,1972,38,781-789; RRW,5-6;Hölzel,89.
AKROCHORDITE	$(Mn,Mg)_5(AsO_4)_2(OH)_4.4H_2O$	$(Mn,Mg)_5{}^{o}As_2{}^{t}[O_8(OH)_4(H_2O)_4]$	Mon. $P2_1/c$	a=5.682Å β=99.49° b=17.627Å Z=2 c=6.832Å	$(Mn,Mg)_{I}$(2a) $(Mn,Mg)_{II-III}$(4e) As(4e) ...		Am.Min.,1989,74,256-262; Hölzel,167;RRW,8;Am.Min., 1969,53,1179(Abs.);Moore, 1995a,7-26.
AKSAITE	$MgB_6O_7(OH)_6.2H_2O$	$Mg^{o}(H_2O)_2$ $\{g\}[(B_2{}^{t}B^{tr})_2O_7(OH)_6]$ (≈Volkovskite)	Orth. Pbca	a=12.540Å Z=8 b=24.327Å c=7.480Å	Mg(8c) B_{I-VI}(8c) O_{I-XV}(8c)		Am.Min.,1971,56,1553-1556; RRW,8;Pov.,483;Str.Tab.,261; SR,37A,272-273;Hölzel,116.
ALUMINITE	$Al_2SO_4(OH)_4.7H_2O$	$(H_2O)_4[\ Al_2{}^{o}(OH)_4(H_2O)_3\{g\}[S^{t}O_4]\ ]$	Mon. $P2_1/c$	a=7.440Å β=110.18° b=15.583Å Z=4 c=11.700Å	Al_{I-II}(4e) S(4e) O_{I-XV}(4e) $H_{I-XVIII}$(4e)		Acta Cryst.,1978,B34,2407-2412;Zeit.Krist.,1980,151,141-152;SR,44A,272;Zeit.Krist., 1998,213,141-150.
AMARANTITE	$Fe_2O(SO_4)_2.7H_2O$	$(H_2O)_6\{1\infty\}[Fe_4{}^{o}S_4{}^{t}O_{18}(H_2O)_8]$	Tric. $P\bar{1}$	a=8.976Å α=95.6° b=11.678Å β=90.36° c=6.698Å γ=97.20° Z=2	Fe_{I-II}(2i) S_{I-II}(2i) O_{I-XVI}(2i) ...		Zeit.Krist.,1968,127,261-275; Pov.,599;Str.Tab.,293;Hölzel, 134;Zeit.Krist.,1998,213,141-150.
AMARILLITE	$NaFe(SO_4)_2.6H_2O$		Mon. P2/m ?	a=5.33Å β=95°37' b=6.87Å Z=1 c=7.89Å			Hölzel,130;Am.Min.,1936,21, 270-271(Abs.).
AMMONIOBORITE	$(NH_4)_3B_{15}O_{20}(OH)_8.4H_2O$		Mon. C2/c	a=25.27Å β=94°17.5' b=9.65Å Z=4 c=11.56Å			Am.Min.,1959,44,1150-1158; Pov.,479,158;Str.Tab.,259; RRW,19.
ANALCIME (cubic)	$Na(AlSi_2)O_6.H_2O$	$Na(H_2O)$ $\{3\infty\}[Si_2{}^{t}Al^{t}O_6]$ (≈Sodalite;Zeolite)	Cub. I a3d	a=13.73Å Z=16	½Na(24c) O(96h) (Si,Al)(48g) ...	$Na(H_2O)$ $\{3\infty\}[Si_2{}^{t}Al^{t}O_6]$ ANALCIME (cubic)	Zeit.Krist.,1972,135,240-252; SR,38A,361;Pov.,351;Str.Tab., 471;RRW,20;LF,293;285
ANALCIME (monoclinic)	$Na(AlSi_2)O_6.H_2O$	$Na(H_2O)$ $\{3\infty\}[Si_2{}^{t}Al^{t}O_6]$ (≈Sodalite;Zeolite)	Mon. C2/c	a=13.689Å β=90.3Å b=13.676Å Z=16 c=13.665Å	Na_{I-II}(4e) 1/2Na_{III-IV}(8f) Si_{I-IV}(8f) ...	Dist.deriv. $Na(H_2O)$ $\{3\infty\}[Si_2{}^{t}Al^{t}O_6]$ ANALCIME (cubic)	Zeit.Krist.,1988,184,63-69.
ANAPAITE	$Ca_2Fe(PO_4)_2.4H_2O$	$3\infty[Ca_2{}^{[7by]}Fe^{o}P_2{}^{t}O_8(H_2O)_4]$	Tric. $P\bar{1}$	a=6.447Å α=101.64° b=6.816Å β=104.24° c=5.898ÅZ=1γ=70.76°			SR,45A,309;K/B,88-89;RRW, 21;Hölzel,163.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
APJOHNITE	$MnAl_2(SO_4)_4.22H_2O$	$Mn^{o}Al_2^{o}S_4^{t}[O_{16}(H_2O)_{22}]$ (=Halotrichite)	Mon. $P2_1/c$	a=6.198Å β=100.28° b=24.347Å Z=4 c=21.266Å	Mn(4e) Al_{I-II}(4e) S_{I-IV}(4e) ...		Min.Mag.,1976,40,599-608; Hölzel,129.
ARHBARITE	$Cu_2(AsO_4(OH).6H_2O$		Mon. ?	?			Am.Min.,1983,68,1038(Abs.); Hölzel,167.
ARMSTRONGITE	$CaZrSi_6O_{15}.2.5H_2O$	$Ca^{o}Zr^{o}(H_2O)_{2.5}\{2\infty\}[Si_6^{t}O_{15}]$	Mon. C2/m...	a=14.04Å β=109°33' b=14.16Å Z=4 c=7.81Å	Zr(4c) Ca(4c) Si_{I-VI}(4c) ...		Sov.Phys.Cryst.,1978,23,539-542;Am.Min.,1974,59,208-212; SR,45A,368;Hölzel,221.
ARSENBRACKE-BUSCHITE	$Pb_2(Fe,Zn)(AsO_4)_2.H_2O$	$Pb_2^{[6/11]}(Fe,Zn)^{o}As_2^{t}[O_8(H_2O)]$ (≈Brackebuschite)	Mon. P2/m	a=7.764Å β=112.5° b=6.045Å Z=2 c=9.022Å			Am.Min.,1978,63,1289-1291 (Abs.);Min.Abs.,81-1245;SR, 44A, 263;Hölzel,163.
ARTINITE	$Mg_2CO_3(OH)_2.3H_2O$	$Mg_2^{o}\{g\}[C^{tr}O_3](OH)_2(H_2O)_3$	Mon. C2/m	a=16.560Å β=99.10° b=3.153Å Z=2 c=6.231Å	Mg(4i) ½C(4i) ...		Acta Cryst.,1977,B33,3951-3953;SR,30A,408-409;SR, 43A,233-234;Pov.,620;Str. Tab.,247;RRW,38.
ASBOLANE	$Mn(O,OH)_2(Co,Ni,Ca)_x(OH)_{2x}.nH_2O$		Hex. ?	a=2.823Å Z=? c=9.34Å			Am.Min.,1982,67,417-418; Hölzel,74.
BASALUMINITE	$Al_4SO_4(OH)_{10}.4H_2O$	$Al_4^{o}S^{t}[O_4(OH)_{10}(H_2O)_4]$	Mon. ?	a=14.857Å β=122.28° b=10.011Å Z=4 c=11.086Å			Min.Mag.,1980,43,931-937; RRW,53;Str.Tab.,294;Pov., 728;737,599.
BAYLISSITE	$K_2Mg(CO_3)_2.4H_2O$	$K^{[5+3]}Mg^{o}(H_2O)_4\{g\}[C^{tr}O_3]_2$	Mon. $P2_1/n$	a=11.404Å β=99.66° b=6.228Å Z=2 c=6.826Å	K(4e) Mg(2d) C(4e) O_{I-V}(4e)		SR,44A,234-235;Min.Abs.,77-2183;Hölzel,104.
BEARSITE	$Be_2AsO_4(OH).4H_2O$		Mon. C2/c	a=8.55Å β=97°49' b=36.90Å Z=12 c=7.13Å			Pov.,519;Str.Tab.,340;RRW, 57;Am.Min.,1963,48,210-211 (Abs.).
BERBORITE	$Be_2BO_3(OH,F).H_2O$	$\{3\infty\}[Be_2^{t}B^{tr}O_3(OH,F)(H_2O)]$	Trig. P3	a=4.43Å Z=1 c=5.33Å	B(1a) Be_I(1c) Be_{II}(1b) O_I(3d) O_{II}(1c) O_{III}(1b),,,		N.Jb.Abh.,1990,162,101-116; Pov.,469;Str.Tab.,253;Am. Min.,1968,53,348-349(Abs.); RRW,61;Hölzel,112.
BERMANITE	$Mn_3(PO_4)_2(OH)_2.4H_2O$	$Mn_3^{o}P_2^{t}[O_8(OH)_2(H_2O)_4]^{c}$	Mon. $P2_1$	a=5.446Å β=110.29° b=19.25Å Z=2 c=5.428Å	P_{I-II}(2a) O_{I-VIII}(2a) Mn_{I-III}(2a) ...		Am.Min.,1976,61,1241-1248; K/B,69-70;SR,42A,344-345; Pov.,550;Str.Tab.,342;Hölzel, 170.
BETA-ROSELITE	$Ca_2(Co,Mg)(AsO_4)_2.2H_2O$		Tric. P $\bar{1}$	a=5.88Å α=112°19' b=7.67Å β=71°12' c=5.58Å γ=119°41' Z=1			RRW,66-67;Bull.Min.,1960,83, 118-121.
BIKITAITE (triclinic)	$LiAlSi_2O_6.H_2O$	$3\infty[Li^{t}Al^{t}Si_2^{t}O_6(H_2O)]$	Tric. P1	?			Encyc.Miner.Nam.,39.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
BIKITAITE - (monoclinic)	$LiAlSi_2O_6.H_2O$	$3\infty[Li^tAl^tSi_2^tO_6(H_2O)]$	Mon. $P2_1$	a=8.613Å β=114.45° b=4.962Å Z=2 c=7.600Å	Li(2a) O_{I-VII}(2a) (Al,Si)$_{I-II}$(2a) Si(2a)		Am.Min.,1974,59,71-78;RRW, 70;Pov.,346;Str.Tab.,470;SR, 40A,282;Hölzel,245.
BIRINGUCCITE	$Na_2B_5O_8(OH).H_2O$		Mon. $P2_1/c$	a=11.1955Å β=93.891° b=6.5607Å Z=8 c=20.7566Å	Na_{I-IV}(4e) B_{I-X}(4e) ...		Am.Min.,1974,59,1005-1015; SR,40A,218-219;Encyc.Miner. Nam.,40;Hölzel,117.
BIRNESSITE	(Na,Ca,K)(Mg,Mn) $Mn_6O_{14}.5H_2O$	$(Mg,Mn)^oMn_6^o$ $[O_{14}(Na,Ca,K)(H_2O)_5]$ (≈Chalcophanite)	(Hex.) Mon. C2/m	a=5.175Å β=103.18° b=2.850Å Z=? c=7.337Å			Am.Min.,1990,75,477-489; Hölzel,74;Am.Min.,1988,73, 1401-1404.
BLÖDITE	$Na_2Mg(SO_4)_2.4H_2O$	Na_2^o $\{g\}[Mg^oS_2^tO_8(H_2O)_4]$	Mon. $P2_1/a$	a=11.126Å β=100.84° b=8.242Å Z=2 c=5.539Å	Na(4e) Mg(2a) O_{I-VI}(4e) S(4e) ...		Can.Min.,1985,23,669-674; RRW,76;Pov.,595;SR,22,464.
BOGGSITE	$Na_3Ca_8(Si,Al)_{96}$ $O_{192}.70H_2O$	$Na_3Ca_8(H_2O)_{70}$ $\{3\infty\}[(Si,Al)_{96}^tO_{192}]$ (Zeolite)	Orth. I mma	a=20.236Å Z=1 b=23.798Å c=12.798Å	Si_{I-VI}(16j) O_{I-VI}(16j) ...		Am.Min.,1990,75,501-507;Am. Min.,1990,75,1200-1204; Hölzel suppl..
BOLIVARITE	$Al_2PO_4(OH)_3$. 4-5H_2O		Amorph.	-			Can.Min.,1995,33,59-65;Min. Mag.,1971,38,418-423;RRW, 78.
BORAX	$Na_2B_4O_5(OH)_4$. $8H_2O$	$[\{g\}[B_2^{tr}B_2^tO_5(OH)_4]$ $\{1\infty\}[Na_2^o(H_2O)_8]$	Mon. C2/c	a=11.885Å β=106.623° b=10.654Å Z=4 c=12.206Å	Na_I(4a) Na_{II}(4e) B_{I-II}(8f) ...	$\{g\}[B_2^{tr}B_2^tO_5(OH)_4]$ $\{1\infty\}[Na_2^o(H_2O)_8]$ BORAX	Acta Cryst.,1978,B34,3502-3510;LF,219;Pov.,478;Str. Tab.,258.
BOSTWICKITE	$CaMn_6Si_3O_{16}.7H_2O$		?	?			Min.Mag.,1983,47,387-389; Hölzel,190.
BOUSSINGAULTITE	$(NH_4)_2Mg(SO_4)_2$. $6H_2O$		Mon. $P2_1/a$	a=9.383Å β=107°03' b=12.669Å Z=2 c=6.220Å	(NH4)(4e) Mg(2a) S(4e) ...		Acta Cryst.,1964,17,1478-1479,1295-1299;Pov.,595-596;Str.Tab., 289;RRW,83.
BRACKEBUSCHITE	$Pb_2(Mn,Fe)(VO_4)_2$. H_2O		Mon. $P2_1/m$ ...	a=8.810Å β=111°30' b=6.155Å Z=2 c=7.651Å	Pb(4c) V(4c) ...		Min.Mag.,1973,39,69-73;SR, 19,451-453;Pov.,497;Str.Tab., 339;RRW,83-84.
BRAITSCHITE - (Ce)	$(Ca,Na_2)_7(Ce,La)_2$ $B_{22}O_{43}.7H_2O$		Hex. ?	a=12.156Å Z=1 c=7.377Å			Am.Min.,1968,53,1081-1095; Pov.,487-488;Str.Tab.,262; RRW;84;Hölzel,118.
BRANDTITE	$Ca_2(Mn,Mg)$ $(AsO_4)_2.2H_2O$	$Ca_2^{[7]}\{1\infty\}[(Mn,Mg)^o$ $As_2O_8(H_2O)_2]$ (=Kröhnkite)	Mon. $P2_1/c$	a=5.65Å β=99°30' b=12.80Å Z=2 c=5.65Å	Mn(2a) Ca(4e) As(4e) O_{I-IV}(4e) (H_2O)(4e)		SR,16,289-292;Pov.,519-520; Str.Tab.,337,287;RRW;85.
BRASSITE	$Mg(AsO_3OH).4H_2O$	Mg^oAs^t $[O_3(OH)(H_2O)_4]$	Orth. Pbca	a=7.47Å Z=8 b=10.89Å c=16.58Å	As(8c) Mg(8c) O_{I-IV}(8c) ...		Acta Cryst.,1976,B32,1460-1466;SR,42A,363;Hölzel,162; Am.Min.,1975,60,945(Abs.).
BREWSTERITE	$(Sr,Ba,Ca)(Al_2Si_6)$ $O_{16}.5H_2O$	$(Sr,Ba,Ca)^{[9]}(H_2O)_5$ $\{3\infty\}[Al_2^tSi_6^tO_{16}]$ (Zeolite)	Mon. $P2_1/m$	a=6.767Å β=94.40° b=17.455Å Z=2 c=7.729Å ...	(Sr,Ba)(2e) $(Al,Si)_{I-IV}$(4f) ...		Acta Cryst.,1985,C41,492-497;RRW,87;Pov.,353-354; SR,29,399-401.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
BRUSHITE	$Ca(PO_3OH).2H_2O$	$Ca^{[6+2]}P^t$ $[O_3(OH)(H_2O)_2]$ (≈Gypsum)	Mon. I 2/a	a=5.812Å β=116.4° b=15.180Å Z=4 c=6.239Å	Ca(4e) P(4e) O_{I-III}(8fa) H(4e)		SR,37A,293,22,408-411,27, 574;RRW,93;Pov.,557-558; Str.Tab.,339;Hölzel,165.
BUDDINGTONITE	$(NH_4)(Si_3Al)O_8.$ $0.5H_2O$	$(NH_4)(H_2O)_{0.5}$ $\{3\infty\}[Si_3^tAl^tO_8]$ (≈Sanidine)	Mon. $P2_1$ ...	a=8.571Å β=112°44' b=13.032Å Z=4 c=7.187Å			Am.Min.,1964,49,831-850; Pov.,345-347;Str.Tab.,476; RRW,93;LF,266.
BULACHITE	$Al_2AsO_4(OH)_3.$ $3H_2O$		Orth. Pmnm ...	a=15.53Å Z=10 b=17.78Å c=7.03Å			Am.Min.,1985,70,214(Abs.); Hölzel,169.
BUTLERITE	$FeSO_4(OH).2H_2O$	$Fe^oS^t[O_4(OH)(H_2O)_2]$	Mon. $P2_1/m$	a=6.50Å β=108°23' b=7.37Å Z=2 c=5.84Å	Fe(2a)S(2e) O_I(4f) O_{II-III}(2e) ...		Am.Min.,1971,56,751-757;SR, 37A,309-310;Pov.,599;Str. Tab.,293;RRW,96.
CAFARSITE	$(Ca,Mn)_8(Ti,Fe)_{6.5}$ $(AsO_3)_{12}.2H_2O$		Cub. Pn3	a=15.984Å Z=4			SR,44A,263;RRW,99;Am.Min., 1978,63,795(Abs.);Am.Min., 1967,52,1584(Abs.);Min.Abs., 78-1499.
CAFETITE	$(Ca,Mg)(Fe,Al)_2Ti_4$ $O_{12}.4H_2O$		Orth. Ammm ...	a=31.34Å Z=6 b=12.12Å c=4.96Å			Am.Min.,1986,71,1045-1048; Am.Min.,1960,45,476;Pov., 319-320;Str.Tab.,198;RRW,99.
CALCIOHILAIRITE	$CaZrSi_3O_9.3H_2O$		Trig. R32	a=20.870Å Z=24 c=16.002Å			Am.Min.,1988,73,1191-1194; Hölzel,205.
CALCIUM CATAPLEIITE	$CaZrSi_3O_9.H_2O$	$Ca^{[6]}(H_2O)$ $\{3\infty\}[Zr^oSi_3^tO_9]$ (≈Catapleiite)	Hex. $P6_3/mmc$	a=7.32Å Z=2 c=10.15Å			RRW,102;Pov.,368-369;Str. Tab.,404;Am.Min.,1964,49, 1153(Abs.);Hölzel suppl..
CANAPHITE	$Na_2CaP_2O_7.4H_2O$		Mon. Pc	a=5.673Å β=106.13° b=8.48Å Z=2 c=10.529Å	Ca(2a) Na_{I-II}(2a) P_{I-II}(2a) O_{I-XI}(2a)		Am.Min.,1988,73,169-171;K/B, 159;Hölzel,166.
CARLOSTURANITE	$(Mg,Fe,Ti)_{21}$ $(Si,Al)_{12}O_{28}(OH)_{34}.$ H_2O	$(Mg,Fe,Ti)_{21}{}^o(Si,Al)_{12}{}^t$ $[O_{28}(OH)_{34}(H_2O)]$	Mon. Cm	a=36.70Å β=101.1° b=9.41Å Z=2 c=7.291Å			Am.Min.,1985,70,767-772; Hölzel,230;Am.Min.,1985,70, 773-781; Hölzel,230.
CARRBOYDITE	$(Ni,Al)_8(SO_4)_{1.6}$ $(OH)_{16}.8.5H_2O$	$(Ni,Al)_8{}^oS_{1.6}{}^t$ $[O_{6.4}(OH)_{16}(H_2O)_{8.5}]^h$	Hex. ?	a=9.14Å Z=? c=10.34Å			Am.Min.,1976,61,366-372; Min.Mag.,1981,44,333-337; Hölzel,134.
CASSIDYITE	$Ca_2(Ni,Mg)(PO_4)_2.$ $2H_2O$		Tric. P $\bar{1}$ ...	a=5.71Å α=96°49.5' b=6.73Å β=107°21.5' c=5.41Å γ=104°34.9' Z=1			Am.Min.,1967,52,1190-1197; Pov.,553-554;Str.Tab.,337; RRW,111;Hölzel,163.
CATAPLEIITE	$Na_2ZrSi_3O_9.2H_2O$	$Na_2^{[6]}(H_2O)_2$ $\{3\infty\}[Zr^oSi_3^tO_9]$	Mon. B2/b	a=23.917Å Z=8 b=20.148Å c=7.432Å			Min.Abs.83M/0153;RRW,111; Pov.,368-369;Str.Tab.,403; Hölzel,205;SB,5,24-25,119.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
CESBRONITE	$Cu_5(TeO_3)_2(OH)_6.2H_2O$		Orth. Pbcn	a=8.624Å Z=2 b=11.878Å c=5.872Å			Min.Mag.,1974,39,744-746; Hölzel,93.
CHABAZITE	$Ca(Al_2Si_4)O_{12}.6H_2O$	$(Ca,\square_5)(H_2O)_6$ $\{3\infty\}[Al_2^tSi_4^tO_{12}]$ (Zeolite)	Trig. R 3m	a=13.78Å a_R=9.421Å c=14.97Å α=94.20° Z=6 Z_R=2	(Al,Si)(12i) O_I(6f) O_{II}(6g)... (rhomb. d.)	$(Ca,\square_5)(H_2O)_6$ $\{3\infty\}[Al_2^tSi_4^tO_{12}]$ CHABAZITE	Acta Cryst.,1982,B38,602-605; LF,287;Pov.,351-352;Str.Tab., 492;RRW,117.
CHALCONATRONITE	$Na_2Cu(CO_3)_2.3H_2O$	$Na_2^o(H_2O)_3Cu^{[5y]}$ $\{g\}[C^{tr}O_3]_2$	Mon. $P2_1/n$	a=9.696Å β=91.83° b=6.101Å Z=4 c=13.779Å	Ca(4e) Na_{I-II}(4e) O_{I-VI}(4e) C_{I-II}(4e) ...		Zeit.Krist.,1978,148,165-177; RRW,119;Pov.,619;SR,45A, 286-287;Hölzel,104.
CHLORMAGALUMINITE	$(Mg,Fe)_4Al_2(OH)_{12}Cl_2.2H_2O$		Hex. P6/mcm ...	a=5.29Å Z=1 c=15.46Å			Am.Min.,1983,68,849(Abs.); Hölzel,107.
CHOLOALITE	$CuPb(TeO_3)_2.H_2O$		Cub. P23...	a=12.519Å Z=12			Min.Mag.,1981,44,55-57;Min. Mag.,1994,58,505-508;Hölzel, 93.
CLARAITE	$(Cu,Zn)_3CO_3(OH)_4.4H_2O$		Hex. ?	a=26.22Å Z=66 c=21.56Å			Am.Min.,1983,68,471(Abs.); Hölzel,106.
CLINOHEDRITE	$CaZnSiO_4.H_2O$	$Ca^oZn^tSi^t[O_4(H_2O)]^c$	Mon. Cc	a=5.090Å β=103.26° b=15.829Å Z=4 c=5.386Å	Ca(4a) Zn(4a) Si(4a) O_{I-V}(4a) ...	$Ca^oZn^tSi^t[O_4(H_2O)]^c$ CLINOHEDRITE	Zeit.Krist.,1976,144,377-392; RRW,135;Pov.,395;Str.Tab., 392;SR,28,261-262;SR,43A, 310;Moore,1995a,7-26.
CLINOPTILOLITE	$(Na,K)_6(Al_6Si_{30})O_{72}.20H_2O$	$(Na,K)_6^{[6]}(H_2O)_{20}$ $\{3\infty\}[Al_6^tSi_{30}^tO_{72}]$ (≈Heulandite,Zeolite)	Mon. C2/m	a=17.660Å β=116.47° b=17.963Å Z=1 c=7.400Å	$(Al,Si)_{I-IV}$(8j) $(Al,Si)_V$(4g) ...		Zeit.Krist.,1977,145,216-239; SR,43A,358;Str.Tab.,542; RRW,136.
COBALTKORITNIGITE	$(Co,Zn)(AsO_3OH).H_2O$		Tric. P $\bar{1}$?	a=7.95Å α=90.9° b=15.83Å β=96.6° c=6.67Å γ=90.0° Z=8			Am.Min.,1982,67,414(Abs.); Hölzel,162;Encyc.Miner.Nam., 69.
COLEMANITE	$CaB_3O_4(OH)_3.H_2O$	$Ca^{[7]}(H_2O)$ $\{1\infty\}[B^{tr}B_2^tO_4(OH)_3]^{my}$	Mon. $P2_1/a$	a=8.743Å β=110°7' b=11.264Å Z=4 c=6.102Å	Ca(4e) B_{I-III}(4e) O_{I-VIII}(4e) ...	$Ca^{[7]}(H_2O)$ $\{1\infty\}[B^{tr}B_2^tO_4(OH)_3]^{my}$ COLEMANITE	Acta Cryst.,1958,11,761-770; LF,217;Pov.,482;Str.Tab.,261; RRW,141.
COLLINSITE	$Ca_2(Mg,Fe)(PO_4)_2.2H_2O$		Tric. P 1	a=5.7344Å α=97.29° b=6.780Å β=108.56° c=5.441Å γ=107.28° Z=1			Min.Mag., 1974,39,577-579; Min.Abs.,75-1944;RRW,141; Pov.,553-554;SR,41A,315; Str.Tab.,336.
COMPREIGNACITE	$K_2(UO_2)_6(OH)_{14}.4H_2O$		Orth. Pnmn ...	a=7.16Å Z=2 b=12.16Å c=14.88Å			Am.Min.,1965,50,807-808 (Abs.);Pov.,327;Str.Tab.,225; Hölzel,90.
COPIAPITE	$Fe_5(SO_4)_6(OH)_2.20H_2O$	$(H_2O)_6\{1\infty\}[Fe_2^oS_3^tO_{12}(OH)(H_2O)_4]_2$ $\{g\}[Fe^o(H_2O)_6]$	Tric. P 1	a=7.390Å α=93°40' b=18.213Å β=102°3' c=7.290Å γ=99°16' Z=1	Fe^{3+}(2i) Fe_{I-II}(2i) S_{I-III}(2i) ...		Am.Min.,1973,58,314-322;Zeit. Krist.,1972,135,34-55;Can. Min.,1985,23,53-56;Zeit.Krist., 1998,213,141-150.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
CORRENSITE	$(Mg,Fe,Al)_9(Si,Al)_8O_{20}(OH)_{10}.nH_2O$	$(Mg,Fe,Al)_9^{o}(OH)_{10}(H_2O)_n\{2\infty\}[(Si,Al)_4^{t}O_{10}]_2^{(2.8)c}$ ≈Vermiculite-Chlorite	Orth. ?	a=5.33Å Z=2 b=9.24Å c=28.3Å			Am.Min.,1982,67, 394-398; Hölzel,231;LF,233-234;Min. Abs., 88-182;RRW,148;Pov., 733;Str.Tab.,464.
COWLESITE	$Ca(Al_2Si_3)O_{10}.5\text{-}6H_2O$	$Ca(H_2O)_{5\text{-}6}\{3\infty\}[Al_2^{t}Si_3^{t}O$ ≈Thomsonite;Zeolite	Orth. $P222_1$	a=11.27Å Z=6 b=15.25Å c=12.61Å			Am.Min.,1975,60, 951-956; Hölzel,246;Min.Mag.,1984,48, 565-566;LF,292.
CYANOCHROITE	$K_2Cu(SO_4)_2.6H_2O$		Mon. $P2_1/a$	a=9.09Å β=104°28' b=12.14Å Z=2 c=6.18Å			RRW,159;Hölzel,129:Str.Tab., 289;Pov.,595.
DEFERNITE	$Ca_3CO_3(OH,Cl)_4.H_2O$		Orth. Pnam	a=17.82Å Z=8 b=22.76Å c=3.629Å	$Ca_{I\text{-}VI}$(4c) $C_{I\text{-}II}$(4c) ...		Am.Min.,1988,73,888-893;Am. Min.,1980,65,1066(Abs.); Hölzel,100.
DIETRICHITE	$(Zn,Fe,Mn)Al_2(SO_4)_4.22H_2O$		Mon. P2	a=20.5Å β=96°34' b=24.2Å Z=4 c=6.18Å			Hölzel,129;RRW,174;Pov.,598; Str.Tab.,285.
DITTMARITE	$(NH_4)MgPO_4.H_2O$		Orth. $Pmn2_1$	a=5.606Å Z=2 b=8.758Å c=4.788Å			Am.Min.,1972,57,1316(Abs.); Hölzel,162;RRW,176.
DORFMANITE	$Na_2(PO_3OH).2H_2O$		Orth. ?	a=10.34Å Z=8 b=16.82Å c=6.01Å			Am.Min.,1981,66,217-218 (Abs.);K/B, 159;Hölzel,165.
DYPINGITE	$Mg_5(CO_3)_4(OH)_2.5H_2O$		?	?			Am.Min.,1970,55,1457-1465; Hölzel,106;RRW,182-183.
EDINGTONITE (tetragonal)	$Ba(Al_2Si_3)O_{10}.3.5H_2O$	$Ba(H_2O)_{3.5}\{3\infty\}[Al_2^{t}Si_3^{t}O_{10}]$ (≈Natrolite,Zeolite)	Tet. $P\bar{4}2_1m$	a=9.584Å Z=2 c=6.524Å			Am.Min.,1985,70,1333-1334 (Abs.);Str.Tab.,487;Pov.,356; SR,42A,404;LF,289.
EDINGTONITE (orthorhombic)	$Ba(Al_2Si_3)O_{10}.4H_2O$	$Ba(H_2O)_4\{3\infty\}[Al_2^{t}Si_3^{t}O_{10}]$ (≈Natrolite,Zeolite)	Orth. $P2_12_12$	a=9.550Å Z=2 b=9.665Å c=6.523Å			Acta Cryst.,1976,B32,1623-1627;SR,42A,404;RRW,185.
EKATERINITE	$Ca_2B_4O_7(Cl,OH)_2.2H_2O$		Hex. P6/m	a=11.86Å Z=12 c=23.88Å			Am.Min.,1983,68,850(Abs.); Am.Min.,1981,66,437(Abs.); Hölzel, 115;Min.Abs.,81-3237.
ELPIDITE	$Na_2ZrSi_6O_{15}.3H_2O$		Orth. Pbcm	a=7.14Å Z=4 b=14.68Å c=14.65Å	Zr(4e) Na_I(4d) Na_{II}(4e) $Si_{I\text{-}III}$(8c) ...		Am.Min.,1973,58,106-109; Pov.,369;Str.Tab.,426;RRW, 188;Hölzel,221.
ENDELLITE	$Al_2Si_2O_5(OH)_4.2H_2O$	$(H_2O)_2\{2\infty\}[Al_2^{o}(OH)_4\{2\infty\}[Si_2^{t}O_5]^{o}]$	Mon. ?	a≈5.2Å β=92°18' b≈8.9Å Z=2 c≈10.1Å		$(H_2O)_2\{2\infty\}[Al_2^{o}(OH)_4\{2\infty\}[Si_2^{t}O_5]^{o}]$ HALLOYSITE -10 Å	RRW,190-191;Pov.,736;Str. Tab.,523,461;Hölzel,235;LF, 239;Pov.,736.
EUCHROITE	$Cu_2AsO_4(OH).3H_2O$	$Cu_2^{o}As^{t}[O_4(OH)(H_2O)_3]$	Orth. $P2_12_12_1$	a=10.056Å Z=4 b=10.506Å c=6.103Å	$Cu_{I\text{-}II}$(4a) As(4a) $O_{I\text{-}VIII}$(4a)		Acta Cryst.,1989,C45,1479-1482;RRW,198;Pov.,516;Str. Tab.,341;Hölzel,167.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
EUDIDYMITE	$Na_2Be_2Si_6O_{15}.H_2O$	$Na_2^{[7]}(H_2O)$ $\{3\infty\}[Be_2^tSi_6^tO_{15}]$	Mon. C2/c	a=12.63Å β=103°43' b=7.38Å Z=4 c=14.02Å	Na(8f) Be(8f) Si_{I-III}(8f) ...		Am.Min.,1972,57,1345-1354; Pov.,362;SR,38A,367;Str.Tab., 430;RRW,200.
EUGSTERITE	$Na_4Ca(SO_4)_3.2H_2O$		Mon. ?	? β=116° Z=?			Am.Min.,1981,66,632-636; Hölzel,131.
EZCURRITE	$Na_2B_5O_7(OH)_3.$ $2H_2O$	$Na_2^{[6/7]}(H_2O)_2$ $\{1\infty\}[B_5^tO_7(OH)_3]$	Tric. P $\bar{1}$	a=8.598Å α=102°45' b=9.570Å β=107°30' c=6.576Å γ=71°31' Z=2	Na_{I-II}(2i) B_{I-V}(2i) O_{I-XII}(2i) ...		Am.Min.,1973,58,110-115;Am. Min.,1967,52,1048-1059;Pov., 485;Str.Tab.,258;RRW,202; SR,39A,262.
FAIRFIELDITE	$Ca_2(Mn,Fe)(PO_4)_2.$ $2H_2O$	$Ca_2^{[7]}$ $\{1\infty\}[(Mn,Fe)^oP_2^tO_8(H_2O)_2]$ (≈Kröhnkite)	Tric. P $\bar{1}$	a=5.79Å α=102°16' b=6.57Å β=108°40' c=5.51Å γ=90°18' Z=1	Ca(2i) Mn(1a) P(2i) O_{I-V}(2i)		Acta Cryst.,1970,B26,640-645; RRW,204;Pov.,553-554; Str.Tab.,336;SR,35A,333-334.
FALCONDOITE	$(Ni,Mg)_4Si_6O_{15}$ $(OH)_2.6H_2O$	$(Ni,Mg)_4^o(H_2O)_6(OH)_2$ $\{2\infty\}[Si_6^tO_{15}]$ (=Sepiolite, ≈Palygorskite)	Orth. Pncn	a=13.5Å Z=4 b=29.9Å c=5.24Å			Hölzel,236;Encyc.Miner.Nam., 95;Can.Min.,1976,14,407-409.
FELSÖBÁNYAITE	$Al_4SO_4(OH)_{10}.$ $5H_2O$		Hex. ?	?			Am.Min.,1965,50,812(Abs.); Hölzel,135.
FERRINATRITE	$Na_3Fe(SO_4)_3.3H_2O$	$\{3\infty\}[Na_3^{[7]}Fe^oS_3^tO_{12}$ $(H_2O)_3]$	Trig. P 3	a=15.566Å c=8.69Å Z=6	Na_{I-III}(6g) Fe_{I-II}(2d) Fe_{III}(1a)Fe_{IV}(1b) Si_{I-III}(6g) ...		Min.Mag.,1977,41,375-383; RRW,209-210;Pov.,594;Str. Tab.,287;Hölzel,130.
FERRISTRUNZITE	$Fe_3(PO_4)_2(OH)_3.$ $5H_2O$		Tric. P1 ...	a=10.01Å α=90.52° b=9.73Å β=96.99° c=7.334Å γ=116.43° Z=2			Am.Min.,1989,74,502(Abs.); Hölzel,168.
FERROSTRUNZI-TE	$Fe_3(PO_4)_2(OH)_2.$ $6H_2O$		Tric. P 1	a=10.23Å α=89.65° b=9.77Å β=98.28° c=7.37Å γ=117.26° Z=2			Am.Min.,1984,69,811(Abs.); K/B,156;Hölzel,171.
FIBROFERRITE	$FeSO_4(OH).5H_2O$	$Fe^oS^t[O_4(OH)(H_2O)_5]$	Trig. R 3	a=24.176Å Z=18 c=7.656Å			Min.Abs.,83M/1237;RRW,213-214;Pov.,599;Str.Tab.,293; Hölzel,135.
GAIDONNAYITE	$Na_2ZrSi_3O_9.2H_2O$	$Na_2^oZr^o(H_2O)_2$ $\{1\infty\}[Si_3^tO_9]$ (=Georgechaoite)	Orth. $P2_1nb$	a=11.740Å Z=4 b=12.820Å c=6.691Å	Na_{I-II}(4a) Zr(4a) Si_{I-III}(4a) ...		Can.Min.,1985,23,11-15; Hölzel,205.
GAYLUSSITE	$Na_2Ca(CO_3)_2.5H_2O$	$Ca^{[8]}Na_2^{[6]}(H_2O)_5$ $\{g\}[(C^{tr}O_3)]_2$	Mon. C2/c	a=14.349Å β=127°51' b=7.780Å Z=4 c=11.207Å	Na(8f) Ca(4e) O_{I-V}(8f) O_{VI}(4e) C(8f) ...		SR,33A,435-436;Am.Min., 1967,52,1570-1572;Hölzel, 164;Pov.,619;Str.Tab.,245.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
GEORGEITE	$Cu_5(CO_3)_3(OH)_4.6H_2O$		Amorph.	-			Min.Mag.,1979,43,97-98;Min. Mag.,1991,55,163-166.
GINIITE	$Fe_5(PO_4)_4(OH)_2.2H_2O$		Mon. $P2/a$	a=14.253Å β=111.30° b=5.152Å Z=2 c=10.353Å			Min.Abs.,81-3230;Am.Min., 1980,65,1066(Abs.).
GISMONDINE	$Ca_2Al_4Si_4O_{16}.9H_2O$	$Ca_2^{o}(H_2O)_9$ $\{3\infty\}[Al_4^{t}Si_4^{t}O_{16}]$ (Zeolite)	Mon. $P2_1/c$	a=10.02Å β=92°25' b=10.62Å Z=2 c=9.84Å	Ca(4e) $Al_{I\text{-}II}$(4e) $Si_{I\text{-}II}$(4e) ...	$Ca_2^{o}(H_2O)_9$ $\{3\infty\}[Al_4^{t}Si_4^{t}O_{16}]$ GISMONDINE	Am.Min.,1963,48,664-672;SR, 28,279-281;Pov.,355;Str.Tab., 491;RRW,237;LF,295.
GMELINITE	$Na_4(Al_4Si_8)O_{24}.11H_2O$	$Na_4(H_2O)_{11}$ $\{3\infty\}[Al_4^{t}Si_8^{t}O_{24}]$ (Zeolite)	Hex. $P6_3/mmc$	a=13.756Å Z=1? c=10.048Å	Na(4f) (Si,Al)(24l) ...		SR,31A,227-228;Min.Abs., 83M-0165;LF,286;Pov.,351-352; Str.Tab.,492;RRW,240.
GOLDICHITE	$KFe(SO_4)_2.4H_2O$	$K^{[10/11]}\{2\infty\}[Fe^{o}S_2^{t}O_8(H_2O)_4]$	Mon. $P2_1/c$	a=10.387Å β=101.68° b=10.486Å Z=4 c=9.086Å	K(4e) Fe(4e) $O_{I\text{-}XII}$(4e)		Am.Min.,1971,56,1917-1933; RRW,241-242;Pov.,595;Str. Tab.,287;SR,37A,308-309.
GOOSECREEKITE	$Ca(Al_2Si_6)O_{16}.5H_2O$	$Ca^{[6]}(H_2O)_5$ $\{3\infty\}[Al_2^{t}Si_6^{t}O_{16}]$ (Zeolite)	Mon. $P2_1$	a=7.401Å β=105.44° b=17.439Å Z=2 c=7.293Å	Ca(2a) $Al_{I\text{-}II}$(2a) $Si_{I\text{-}VI}$(2a) ...		Am.Min.,1986,71,1494-1501; Hölzel,246.
GÖRGEYITE	$K_2Ca_5(SO_4)_6.H_2O$	$K_2^{[8]}[Ca_3^{[9]}Ca_2^{[8]}S_6^{t}O_{24}(H_2O)]$	Mon. $B2/b$	a=17.519Å β=113.33° b=18.252Å Z=4 c=6.840Å			Min.Abs.,82M/1152;RRW,243; Pov.,594;Str.Tab.,290;Hölzel, 131;RRW,243;SR,46A,349; Zeit.Krist.,1998,213,141-150.
GOWERITE	$CaB_6O_8(OH)_4.3H_2O$		Mon. $P2_1/a$	a=12.882Å β=121.62° b=16.360Å Z=4 c=6.558Å	Ca(4e) $B_{I\text{-}VI}$(4e) $O_{I\text{-}XII}$(4e) ...		Am.Min.,1972,57,381-396; RRW,244;Pov.,483;Str.Tab., 261;SR,38A,296.
GRANTSITE	$Na_4Ca_{0.7}V_{12}O_{32}.8H_2O$		Mon. C2/m ...	a=17.54Å β=95°15' b=3.60Å Z=1 c=12.41Å			Am.Min.,1964,49,1511-1526; RRW,245-246;Pov.,502;Str. Tab.,223;Am.Min.,1990,75, 508-521;Hölzel,88.
GRUMANTITE	$NaSi_2O_4(OH).H_2O$		Orth. Fdd2	a=15.979Å Z=16 b=18.25Å c=7.169Å			Zeit.Krist.,1988,185,612(Abs.), Am.Min.,1988,73,440(Abs.); Hölzel,226.
HAIDINGERITE	$Ca(AsO_3OH).H_2O$	$Ca^{o}As^{t}[O_3(OH)(H_2O)]$	Orth. Pcnb	a=6.904Å Z=8 b=16.161Å c=7.935Å	Ca(8d) As(8d) $O_{I\text{-}IV}$(8d) ...		Acta Cryst.,1972,B28,209-214; Bull.Min.,1966,89,18-22;Pov., 524;Str.Tab.,338;RRW,254-255;SR,32A,387-388.
HALLOYSITE - - 10Å	$Al_2Si_2O_5(OH)_4.2H_2O$	$(H_2O)_2\{2\infty\}[Al_2^{o}(OH)_4$ $\{2\infty\}[Si_2^{t}O_5]^{o}]$	Mon. Cm	a=5.20Å β=100° b=8.92Å Z=2 c=10.25Å	Al(4b) Si(4b) ...	$(H_2O)_2\{2\infty\}[Al_2^{o}(OH)_4$ $\{2\infty\}[Si_2^{t}O_5]^{o}]$ HALLOYSITE - 10Å	LF,239;RRW,256;Pov.,436; Str.Tab.,461;SB,3,544-545.
HALOTRICHITE	$FeAl_2(SO_4)_4.22H_2O$	$Fe^{o}Al_2^{o}S_4^{t}$ $[O_{16}(H_2O)_{22}]$ (=Apjohnite)	Mon. $P2/m$	a=20.51Å β=100°6' b=24.28Å Z=4 c=6.18Å			Hölzel,129;RRW,256;Pov.,598; Str.Tab.,285;Min.Abs.,88M/1830.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
HALURGITE	$Mg_2(B_4O_5(OH)_4)_2.H_2O$		Mon. P2/c	a=13.25Å β=92°9' b=7.60Å Z=4 c=13.20Å			Sov.Phys.Cryst.,1965,9,616-617;Hölzel,115;Pov.,478;Str. Tab.,258.
HELMUTWINKLE-RITE	$PbZn_2(AsO_4)_2.2H_2O$		Tric. P1 ...	a=5.63Å α=94.7° b=7.760Å β=110.7° c=5.60Å γ=112.7° Z=1			Min.Abs.,80-4913;Hölzel,162; Am.Min.,1980,65,1067(Abs.).
HEMIMORPHITE	$Zn_4Si_2O_7(OH)_2.H_2O$	(H_2O) $\{3\infty\}[Si_2^tZn_4^tO_7(OH)_2]$	Orth. I mm2	a=8.367Å Z=2 b=10.730Å c=5.115Å	Zn(8e) Si(4d) ...		Zeit.Krist.,1977,146,241-259; Str.Tab.,76;LF,194.
HEULANDITE	$(Na,K,Ca,Sr,Ba)_5(Al_9Si_{27})O_{72}.26H_2O$	$(Na,K,Ca,Sr,Ba)_5^{[6]}(H_2O)_{26}$ $\{3\infty\}[Al_9^tSi_{27}^tO_{72}]$ (Zeolite)	Mon. Cm	a=17.73Å β=116°20' b=17.82Å Z=1 c=7.43Å	$Na,K,Ca,Sr)_{I-III}$ (2a) $(Si,Al)_{I-IX}$(4b) ...	$(Na,K,Ca,Sr,Ba)_5^{[6]}$ $(H_2O)_{26}$ $\{3\infty\}[Al_9^tSi_{27}^tO_{72}]$ HEULANDITE	Am.Min.,1968,53,1120-1138; Pov.,354;Str.Tab.,489;RRW, 271-272;LF,298.
HILAIRITE	$Na_2ZrSi_3O_9.3H_2O$	$Na_2(H_2O)_3$ $\{1\infty\}[Zr^oSi_3^tO_9]$	Trig. R32	a=10.556Å Z=6 c=15.855Å			Min.Abs.,83M/4219;Hölzel,205 .
HILGARDITE - - 1Tc	$Ca_2B_5O_9Cl.H_2O$	$Ca_2^{[8/7]}(H_2O)Cl$ $\{3\infty\}[B_3^tB_2^{tr}O_9]$ (≈Tyretskite)	Tric. P1	a=6.463Å α=61°38' b=6.564Å β=118°46' c=6.302Å γ=105°46' Z=1			Min.Abs.,79/2129;Hölzel,118; Am.Min.,1985,70,636-637;SR, 45A,282-283.
HILGARDITE - - 3Tc	$Ca_2B_5O_9Cl.H_2O$	$Ca_2^{[8by]}(H_2O)Cl$ $\{3\infty\}[B_3^tB_2^{tr}O_9]$ (≈Tyretskite)	Tric. P1	a=17.495Å α=60.77° b=6.487Å β=79.56° c=6.313Å γ=83.96° Z=3	Ca_{I-VI}(1a) Cl_{I-III}(1a) ...		Am.Min.,1983,68,604-613;Am. Min.,1985,70,636-637.
HILGARDITE - 4M	$Ca_2B_5O_9Cl.H_2O$	$Ca_2^{[8by]}(H_2O)Cl$ $\{3\infty\}[B_3^tB_2^{tr}O_9]$ (≈Zeolite)	Mon. Aa	a=11.438Å β=90.06° b=11.318Å Z=4 c=6.318Å	Ca_{I-II}(4a) Cl(4a) B_{I-V}(4a) ...		Am.Min.,1979,64,187-195;Am. Min.,1985,70,636-637;Hölzel, 118.
HISINGERITE	$Fe_2Si_2O_5(OH)_4.2H_2O$		Mon. ? (Amorph.)	?			Min.Abs.;83M/2626;Pov.,741; Str.Tab.,462;Hölzel,235.
HOHMANNITE	$Fe_2O(SO_4)_2.8H_2O$	$(H_2O)_4\{1\infty\}[Fe_2^oS_2^tO_9(H_2O)_4]$ (≈Amarantite)	Tric. P $\bar{1}$	a=9.148Å α=90.29° b=10.922Å β=90.79° c=7.183Å γ=107.36° Z=2			SR,44A,273;Min.Mag.,1978, 42,144-146;Hölzel,135;Zeit. Krist.,1998,213,141-150;Str. Tab.,293;Pov.,599;RRW,277.
HONESSITE	$(Ni,Fe)_8SO_4(OH)_{16}.nH_2O$	$(H_2O)_n[\ 2\infty[(Ni,Fe)_8^o(OH)_{16}\{g\}[S^tO_4]\ ]$ (≈Reevesite)	Trig. ?	a=3.083Å c=26.71Å Z=?			Am.Min.,1959,44,995-1009; Hölzel,134;Pov.,606;Str.Tab., 534;Min.Mag.,1981,44,339-343;Zeit.Kris.,1998,213,141.
HUEMULITE	$Na_4MgV_{10}O_{28}.24H_2O$		Tric. P1 ...	a=11.770Å α=107°13' b=11.838Å β=112°10' c=9.018Å γ=101°30' Z=1			Am.Min.,1966,51,1-13;Hölzel, 87;RRW,282;Str.Tab.,222; Pov.,502.

Table 200 $A_pB_qC_rD_s.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
HUMMERITE	$KMgV_5O_{14}.8H_2O$		Tric. P $\bar{1}$	a=10.81Å α=106°4' b=11.01Å β=107°49' c=8.85Å γ=65°40' Z=2			Pov.,502;Am.Min.,1955,40,314-315;RRW,284;Hölzel,87;Str.Tab.,221;Am.Min.,1951,36,326-327.
HUNGCHAOITE	$MgB_4O_5(OH)_4.7H_2O$	$(H_2O)_2\{3\infty\}[Mg^{o}(H_2O)_5B_4{}^{t}O_5(OH)_4]$	Tric. P $\bar{1}$	a=8.807Å α=103.39° b=10.657Å β=108.53° c=7.897Å γ=97.18° Z=2	Mg(2i) $B_{I\text{-}IV}$(2i) $O_{I\text{-}V}$(2i) ...		Am.Min.,1977,62,1135-1143;SR,43A,225;Am.Min.,1965,50,262(Abs.);Hölzel,115.
HYDROBASALUMINITE	$Al_4SO_4(OH)_{10}.15H_2O$		Mon. ?	a=14.911Å β=112.40° b=9.993Å Z=? c=13.640Å			Min.Mag.,1980,43,931-937;Pov.,606;Str.Tab.;294;Hölzel,135.
HYDROCALUMITE	$Ca_4Al_2(OH)_{12}(Cl,CO_3,OH,H_2O)_{2.5}.4H_2O$		Mon. $P2_1$	a=9.6Å β=111° b=11.4Å Z=4 c=16.8Å			Pov.,330;Str.Tab.,219;RRW,288;Hölzel,108.
HYDROGLAUBERITE	$Na_{10}Ca_3(SO_4)_8.6H_2O$		?	?			Am.Min.,1970,55,321(Abs.);Pov.,606;RRW;289;Hölzel131;Zeit.Krist.,1998,213,141-150.
HYDROMAGNESITE	$Mg_5(CO_3)_4(OH)_2.4H_2O$	$\{3\infty\}[Mg_5{}^{o}(OH)_2(H_2O)_4\{g\}[C^{tr}O_3]_4]$	Mon. $P2_1/c$	a=10.105Å β=114.44° b=8.954Å Z=2 c=8.378Å	$Mg_{I\text{-}II}$(4e) Mg_{III}(2a) $O_{I\text{-}VIII}$(4e) ...		Acta Cryst.,1977,B33, 1273-1275;Hölzel,106;Pov.,620;Str.Tab.,246;SR,40A,227;LF,187.
IANTHINITE	$UO(UO_3)_5.10H_2O$		Orth. ?	a=11.52Å Z=4 b=7.15Å c=30.3Å			Bull.Min.,1959,82,80-86;Am.Min.,1959,44,1103-1104;Hölzel,90.
INDERITE	$MgB_3O_3(OH)_5.5H_2O$	$(H_2O)_5\{g\}[Mg^{o}B_2{}^{t}B^{tr}O_3(OH)_5]$ (≠Kumakovite)	Mon. $P2_1/a$	a=12.02Å β=104°40' b=13.12Å Z=4 c=6.84Å	Mg(4e) $B_{I\text{-}III}$(4e) $O_{I\text{-}XIII}$(4e)		SR,28,160;Hölzel,115;Str.Tab.,257;Pov.,476.
INYOITE	$CaB_3O_3(OH)_5.4H_2O$	$Ca^{[8]}(H_2O)_4\{g\}[B_2{}^{t}B^{tr}O_3(OH)_5]$	Mon. $P2_1/a$	a=10.63Å β=114°2' b=12.06Å Z=4 c=8.405Å	Ca(4e) $B_{I\text{-}III}$(4e) ...		Acta Cryst.,1959,12,162-170;RRW,302;Pov.,476;SR,23,414-415.
IRIGINITE	$U(MoO_4)_2(OH)_2.2H_2O$		Mon. ?	a=8.58Å β=107°40' b=12.87Å Z=3 c=7.48Å			Am.Min.1964,49,408-414;Pov.,572;Str.Tab.,302;Hölzel,141.
JAMBORITE	$(Ni,Fe)_8SO_4(OH)_{16}.nH_2O$		Hex. ?	a=3.07Å Z=? c=23.3Å			Am.Min.,1973,58,835-839;Hölzel,83.
JENNITE	$Ca_9Si_6O_{16}(OH)_{10}.6H_2O$		Tric. ?	a=10.593Å α=99.67° b=7.284Å β=97.65° c=10.839Å γ=110.11° Z=1 ?			Am.Min.,1977,62,365-368;Am.Min.,1966,51,56-74;Hölzel,220;Pov.,419;Str.Tab.,401.
JOLIOTITE	$(UO_2)CO_3.2H_2O$		Orth. Pmmm	a=8.16Å Z=4 b=10.35Å c=6.32Å			Hölzel,109;Encyc.Miner.Nam.,149; Min.Abs.,77/2184.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
JULIËNITE	$Na_2Co(SCN)_4.8H_2O$	$Na_2^{[8]}(H_2O)_8$ $Co^t\{g\}[SCN]_4$	Mon. $P2_1/n$	a=18.941Å β=91.64° b=19.209Å Z=4 c=5.460Å	Na_{I-II}(4e) Co(4e) S_{I-IV}(4e) ...		Acta Cryst.,1982,B38,1084-1088;SR,17,462-463;Str.Tab.,495;Hölzel,250.
JUNITOITE	$CaZn_2Si_2O_7.H_2O$	$Ca^oZn_2^tSi_2^t[O_7(H_2O)]^c$	Orth. Ama2	a=12.510Å Z=4 b=6.318Å c=8.561Å	Zn_{I-II}(4a) Ca(4b) Si(8c) O_{I-III}(8c) O_{IV}(4b) ...	$Ca^oZn_2^tSi_2^t[O_7(H_2O)]^c$ JUNITOITE	Min.Mag.,1985,49,91-95; Hölzel,220;Am.Min.,1976,61,1255-1258;Moore,1995a,7-26.
JURBANITE	$AlSO_4(OH).5H_2O$	$(H_2O)_2[\{g\}[Al_2^o(OH)_2(H_2O)_8]\{g\}[S^tO_4]_2]$ (≈Aluminite)	Mon. $P2_1/n$	a=8.3965Å Z=4 b=12.479Å c=8.1549Å	S(4e) Al(4e) O_{I-X}(4e) ...		Zeit.Krist.,1985,173,33-39;Am.Min.,1976,61,1-4;Hölzel,134;Zeit.Krist.,1998,213,141-150.
KAZAKHSTANITE	$Fe_5V_{15}O_{39}(OH)_9.8.5H_2O$		Mon. C2/c ...	a=11.84Å β=100.0° b=3.650Å Z=1 ? c=21.27Å			Am.Min.,1991,76,667(Abs.); Hölzel suppl..
KENYAITE	$Na_2Si_{22}O_{41}(OH)_8.6H_2O$		Mon. ?	a=7.79Å β=95°54' b=19.72Å Z=1 c=6.91Å			Am.Min.,1968,53,2061-2069; Am.Min.,1968,53,510-511 (Abs.); Hölzel,227;RRW,322.
KERNITE	$Na_2B_4O_6(OH)_2.3H_2O$	$Na_2^{[5]}(H_2O)_3$ $\{1\infty\}[B_2^tB_2^{tr}O_6(OH)_2]$	Mon. $P2_1/c$	a=7.0172Å β=108°86' b=9.1582Å Z=4 c=15.6774Å	Na_{I-II}(4e) B_{I-IV}(4e) O_{I-XI}(4e) ...		Am.Min.,1973,58,21-31;SR,32A,501-502;LF,218;Pov.,482;Str.Tab.,261.
KEROLITE	$Mg_3Si_4O_{10}(OH)_2.H_2O$	$Mg_3^o(OH)_2$ $\{2\infty\}[Si_4^tO_{10}]$ (≈Pimelite,≈Talc)	?	?			Am.Min.,1979,64,615-625; Hölzel suppl.;Str.Tab.,541; Pov.,744;LF,227.
KHADEMITE	$Al(SO_4)F.5H_2O$		Orth. Pcab	a=11.178Å Z=8 b=13.055Å c=10.887Å			Min.Mag.,1988,52,133-134; Hölzel,134;Am.Min.,1981,66,1102-1103(Abs.).
KIMURAITE - (Y)	$CaY_2(CO_3)_4.6H_2O$		Orth. I mm2 ...	a=9.2545Å Z=4 b=23.976Å c=6.0433Å			Am.Min.,1986,71,1028-1033; Hölzel,105.
KINGITE	$Al_3(PO_4)_2(OH,F)_3.9H_2O$		Tric. ?	a=9.15Å α=98.6° b=10.00Å β=93.6° c=7.24Å γ=93.2° Z=2			Am.Min.,1970,55,515-517; RRW,325;Hölzel,168.
KINICHILITE	$(H,Na)_2(Fe,Mg,Zn)_2(TeO_3)_3.3H_2O$		Hex. $P6_3$ ...	a=9.419Å Z=2 c=7.665Å			Am.Min.,1982,67,623(Abs.); Min.Abs.,84M/1932;Hölzel,93.
KINOITE	$Ca_2Cu_2Si_3O_{10}.2H_2O$	$\{3\infty\}[Ca_2^o(H_2O)_2$ $Cu_2^{[5y]}\{g\}[Si_3^tO_{10}]]$ (≈Shattuckite)	Mon. $P2_1/m$ ...	a=6.990Å β=96°5' b=12.890Å Z=2 c=5.654Å	Cu_{I-II}(2e) Ca(4f) Si_I(2e) Si_{II}(4f) ...		Am.Min.,1971,56,193-200; RRW,325;Pov.,407;SR,37A,338.
KIPUSHITE	$(Cu,Zn)_6(PO_4)_2(OH)_6.H_2O$	$(Cu,Zn)_6^oP_2^t$ $[O_8(OH)_6(H_2O)]$ (=Veszelyite)	Mon. $P2_1/c$	a=12.197Å β=96.77° b=9.156Å Z=4 c=10.667Å	Cu_{I-V}(4e) Zn(4e) P_{I-II}(4e) ...		Can.Min.,1985,23,35-42; Hölzel,167;K/B,190,91-92;Am.Min.,1974,59,573-581.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
KOKTAITE	$(NH_4)_2Ca(SO_4)_2.H_2O$		Mon. $P2_1/m$	a=10.17Å β=102°45' b=7.15Å Z=2 c=6.34Å			Pov.,594;Str.Tab.,291;RRW, 329;Hölzel,131;Am.Min.,1949, 34,618(Abs.).
KONYAITE	$Na_2Mg(SO_4)_2.5H_2O$		Mon. $P2_1/c$	a=5.784Å β=95.37° b=24.026Å Z=4 c=8.066Å			Am.Min.,1982,67,1035-1038; Hölzel,130.
KORITNIGITE	$Zn(AsO_3OH).H_2O$		Tric. $P\bar{1}$	a=7.948Å α=90.86° b=15.829Å β=96.56° c=6.668Å γ=90.05° Z=8			Am.Min.,1980,65,203(Abs.); Min.Abs.,81-0253;Hölzel,162.
KOSTYLEVITE	$K_2ZrSi_3O_9.H_2O$		Mon. $P2_1/a$	a=13.171Å β=105.26° b=11.717Å Z=2 c=6.565Å			Am.Min.,1984,69,812(Abs.); Min.Abs.,83M/4213.
KOVDORSKITE	$Mg_2PO_4(OH).3H_2O$	$Mg_2^{o}P^{t}$ $[O_4(OH)(H_2O)_3]$	Mon. $P2_1/a$	a=10.35Å β=102°0' b=12.90Å Z=4 c=4.783Å			Min.Abs.,82M/1161;Am.Min., 1981,66,437(Abs.);K/B,114-115.
KRAUSITE	$KFe(SO_4)_2.H_2O$	$K^{[10]}\{1\infty\}[Fe^{o}S_2^{t}O_8(H_2O)]$	Mon. $P2_1/m$	a=7.920Å β=102.76° b=5.146Å Z=2 c=9.014Å	K(2e) Fe(2e) S_{I-II}(2e) ...		Am.Min.,1986,71,202-205;SR, 30A,372-373;Pov.,603;Zeit. Krist.,1998,213,141-150.
KRAUTITE	$Mn(AsO_3OH).H_2O$	$Mn^{o}As^{t}$ $[O_3(OH)(H_2O)]$ (≈Haidingerite)	Mon. $P2_1/n$	a=8.012Å β=96.60° b=15.956Å Z=8 c=6.801Å	Mn_{I-II}(4e) As_{I-II}(4e) ...		Am.Min.,1979,64,1248-1254; Am.Min.,1976,61,503(Abs.); SR,45A,321.
KRÖHNKITE	$Na_2Cu(SO_4)_2.2H_2O$	$Na_2^{[7]}\{1\infty\}[Cu^{o}S_2^{t}O_8(H_2O)_2]$ (=Brandtite)	Mon. $P2_1/c$	a=5.807Å β=108.32° b=12.656Å Z=2 c=5.517Å	Cu(2a) Na(4e) O_{I-IV}(4e) ...		Acta Cryst.,1975,B31,1753-1755;SR,26,449-451;Pov.,603-604;Zeit.Krist.,1998,213,141.
KTENASITE	$(Cu,Zn)_5(SO_4)_2(OH)_6.6H_2O$	$2\infty[(Cu,Zn)_4^{o}S_2^{t}O_8(OH)_6]\{g\}[Zn^{o}(H_2O)_6]$	Mon. $P2_1/c$	a=5.589Å β=95.55° b=6.166Å Z=2 c=23.751Å	Zn(2a) Cu_{I-II}(4e) S(4e) ...		Zeit.Krist.,1978,147,129-140; Pov.,598;Str.Tab.,292;Zeit. Kris.,1998,213,141-150.
KURNAKOVITE	$MgB_3O_3(OH)_5.5H_2O$	$3\infty[Mg^{o}(OH)_5\{g\}[B_2^{t}B^{tt}O_3(H_2O)_5]]$ (≈Inderite)	Tric. $P\bar{1}$	a=8.3479Å α=98.846° b=10.6068Å β=108.891° c=6.1447Å γ=105.581° Z=2	Mg(2i) O_{I-XIII}(2i) B_{I-III}(2i)		Acta Cryst.,1974,B30,2194-2199;Pov.,477;Str.Tab.,257; Hölzel,114.
LANGITE	$Cu_4SO_4(OH)_6.2H_2O$	$Cu_4^{o}S^{t}$ $[O_4(OH)_6(H_2O)_2]$ (≈Wroewolfeite)	Mon. Pc	a=7.137Å β=90.00° b=6.031Å Z=2 c=11.217Å ?	S(2a) Cu_{I-IV}(2a) O_{I-XII}(2a)		Acta Cryst.,1984,C40,1309-1311;Pov.,598;Str.Tab.,292; RRW,341.
LARDERELLITE	$NH_4B_5O_7(OH)_2.H_2O$	$NH_4(H_2O)\{1\infty\}[B_5O_7(OH)_2]$	Mon. $P2_1/c$	a=9.47Å β=97°5' b=7.63Å Z=4 c=11.65Å	B_{I-IV}(4e) N(4e) O_{I-X}(4e) ...		Acta Cryst.,1969,B25,2264-2270;SR,34A,351-353;RRW, 342;Pov.,479;Str.Tab.,259;Am. Min.,1960,45,1087-1093.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
LAUMONTITE	$Ca(Al_2Si_4)O_{12}.4H_2O$	$Ca^{p}(H_2O)_4$ $\{3\infty\}[Al_2^{t}Si_4^{t}O_{12}]$ (≈Mordenite;Zeolite)	Mon. C2/m	a=14.724Å β=112.01° b=13.075Å Z=4 c=7.559Å	Ca(4i) Al(8j) Si_{I-II}(8j) O_{I-II}(4i) $O_{III-VII}$(8j) ...		Sov.Phys.Cryst.,1985,30,624-626;LF;294;RRW,345;Pov., 357;Str.Tab.,489;SR,32A,483-484.
LAZARENKOITE	$(Ca,Fe)FeAs_3O_7.$ $3H_2O$		Orth. ?	a=21.80Å Z=10 b=12.64Å c=8.40Å			Am.Min.,1982,67,415(Abs.); Hölzel,92.
LECONTITE	$(NH_4,K)Na(SO_4).$ $2H_2O$	$Na^{o}S^{t}$ $[O_4(H_2O)_2(NH_4,K)]$ (≈Mirabilite)	Orth. $P2_12_12_1$	a=8.216Å Z=4 b=12.854Å c=6.232Å	S(4a) Na(4a) N(4a) O_{I-VI}(4a) ...		Acta Cryst.,1967,22,683-687; SR,32A,336-337;Am.Min., 1963,48,180-188;Pov.,595; RRW,350;Str.Tab.,290-291.
LEGRANDITE	$Zn_3AsO_4(OH).H_2O$	$Zn_2^{o}As^{t}$ $[O_4(OH)(H_2O)]$ (≈Spencerite)	Mon. $P2_1/c$	a=12.805Åβ=104°23.3' b=7.933Å Z=8 c=10.215Å	Zn_{I-IV}(4e) As_{I-II}(4e) O_{I-XII}(4e)		Am.Min.,1971,56,1147-1154; Sov.Phys.Cryst.,1973,17,747-748;Pov.,516;Str.Tab.,341.
LENNILENAPEITE	$K_7Mg_{48}(Si,Al)_{72}$ $(O,OH)_{216}.16H_2O$		Tric. P $\bar{1}$?	a=21.9Å ? b=?Å Z=1 c=12.18Å			Hölzel,230;Am.Min.,1985,70, 216(Abs.);Can.Min.,1984,22, 259-263.
LEONITE	$K_2Mg(SO_4)_2.4H_2O$	$3\infty[K^{[9]}K^{[10]}Mg^{[6]}S_2^{t}$ $O_8(H_2O)_4]$	Mon. C2/m	a=11.769Å β=95.31° b=9.539Å Z=4 c=9.889Å	K(8j) Mg_I(2a) Mg_{II}(2d) Si_{I-II}(4i) ...		Zeit.Krist.,1985,173,75-79; Pov.,595;Str.Tab.,288;RRW, 352.
LERMONTOVITE	$UPO_4(OH).H_2O$ (?)		Orth. Ccca	a=9.74Å Z=5 ? b=19.0Å c=10.1Å			Am.Min.,1984,69,214-215 (Abs.);Hölzel,178.
LIKASITE	$Cu_3NO_3(OH)_5.$ $2H_2O$		Orth. $Pc2_1n$	a=5.828Å Z=4 b=6.769Å c=21.690Å	Cu_{I-III}(4a) N(4a) O_{I-VI}(4a) ...		Acta Cryst.,1977,B33,1422-1427;Pov.,633;Str.Tab.,234; RRW,357;SR,43A,242-243.
LINDACKERITE	$H_2Cu_5(AsO_4)_4.$ $9H_2O$		(Tric.) P1 ...	a=8.035Å α=79.60° b=10.368Å β=84.83° c=6.453Å γ=86.17° Z=1			Am.Min.,1996,81,1517(Abs.); Pov.,516;Str.Tab.,333;Hölzel, 162.
LITHOSITE	$K_6Al_4Si_8O_{25}.2H_2O$		Mon. ?	a=15.197Å β=90.21° b=10.233Å Z=2 c=8.435Å			Am.Min.,1984,69,210(Abs.); Hölzel,222.
LOKKAITE - (Y)	$CaY_4(CO_3)_7.9H_2O$		Orth. Pbmm ...	a=39.35Å Z=? b=6.104Å c=9.26Å			Am.Min.,1986,71,1028-1033; Hölzel,105;Am.Min.,1971,56, 1838(Abs.);
LONECREEKITE	$NH_4(Fe,Al)(SO_4)_2.$ $12H_2O$		Cub. Pa3	a=12.302Å Z=4			Am.Min.,1986,71,229(Abs.); Hölzel,129.
LOUGHLINITE	$Na_2Mg_3Si_6O_{16}.$ $8H_2O$		?	a=5.25Å Z=4 b=26.71Å c=14.66Å			Str.Tab.,466;Hölzel,236;Am. Min.,1960,45, 270-281.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
LÖWEITE	$Na_{12}Mg_7(SO_4)_{13}.15H_2O$	$Na_{12}^{[7]}(H_2O)_3\{g\}[S^tO_4]_4\{3\infty\}[Mg_7^oS_9O_{36}(H_2O)_{12}]$	Trig. R $\bar{3}$	a=18.96Å a_R=11.769Å c=13.47Å α=106.5° Z=3 Z_R=1	Na_{I-II}(6f) Mg_I(6f) Mg_{II}(1b) S_{I-II}(6f) S_{III}(2c/2) ...		Str.Tab.,288;RRW,363;Pov., 594;Am.Min.,1970,55,378-386; Zeit.Krist.,1998,213,141-150.
LUDDENITE	$Cu_2Pb_2Si_5O_{14}.14H_2O$		Mon. ?	a=7.85Å β=90.78° b=20.06Å Z=4 c=14.72Å			Am.Min.,1983,68,643(Abs.); Hölzel,247;Min.Mag.,1982,46, 363-364.
MAGADIITE	$NaSi_7O_{13}(OH)_3.3H_2O$		Mon. ?	a=7.25Å β=96.8° b=7.25Å Z=2 c=15.69Å			Am.Min.,1969,54,1583-1591; 1968,53,2061-2069;Hölzel, 227;Str.Tab.,485.
MAKATITE	$Na_2Si_4O_8(OH)_2.4H_2O$	$Na^oNa^{[5by]}(H_2O)_4\{2\infty\}[Si_2^tO_4(OH)]_2$	Mon. $P2_1/c$	a=7.3881Å β=90.64° b=18.094Å Z=4 c=9.5234Å	Si_{I-IV}(4e) Na_I(2d Na_{II}(2c) Na_{III}(4e) ...		Zeit.Krist.,1982,159,203-210; Hölzel,226;Am.Min.,1983,68, 852(Abs.).
MANNARDITE	$BaTi_6(V,Cr)_2O_{16}.H_2O$	$Ti_6^o(V,Cr)_2^o[Ba(H_2O)O_{16}]^{chh}$ (≈Hollandite)	Tet. I $4_1/a$	a=14.357Å Z=4 c=5.908Å	Ba_I(4b) Ba_{II}(4a) Ba_{III-IV}(8e) (v.occ.)O_{I-IV}(16f) ...		Can.Min.,1986,24,67-78;55-66; Hölzel,72;LF,107.
MARICOPAITE	$Ca_2Pb_7(Si,Al)_{48}O_{100}.32H_2O$	$Ca_2Pb_7(H_2O)_{32}\{3\infty\}[(Si,Al)_{48}^tO_{100}]$ (≈Mordenite,Zeolite)	Orth. Cmmm ...	a=19.434Å Z=1 b=19.702Å c=7.538Å	Pb_I(4e) Pb_{II}(4d) Pb_{III-IV}(4c) (v. occ.) ...		Am.Min.,1994,79,175-184; Can.Min.,1988,26,309-313; Hölzel,246;LF,297.
MATTEUCCITE	$NaH(SO_4).H_2O$	$Na^oS^t[O_4H(H_2O)]$ (≈Mirabilite)	Mon. Aa	a=8.217Å β=119°56' b=7.788Å Z=4 c=7.814Å	S(4a) Na(4a) O_{I-IV}(4a) ...		Acta Cryst.,1965,19,426-432; SR,30,365;Hölzel,131.
MCALLISTERITE	$Mg_2(B_6O_7(OH)_6)_2.9H_2O$	$Mg_2^oB_{12}^t[O_{14}(OH)_{12}(H_2O)_9]$	Trig. R $\bar{3}$c	a=11.549Å a_R=13.66Å c=35.537Å α=50°14' Z=6 Z_R=2	Mg(12c) B_{I-II}(36f) ...		SR,41A,421-422;Am.Min., 1965,50,629-640;Pov.,487; Str.Tab.,265;RRW,369.
MELANOCERITE-(Ce)	$(Ce,Ca)_5(Si,B)_3O_{12}(OH,F).nH_2O$ (?)		Amorph. (Hex.)	a=9.35 Å Z=? c=6.88 Å (at 600°C)			Pov.,389;RRW,388;Hölzel,194
MENDOZITE	$NaAl(SO_4)_2.11H_2O$	$Na^oAl^oS_2^t[O_8(H_2O)_{11}]$ (≈Tamarugite)	Mon. C2/c	a=21.75Å β=92°28' b=9.11Å Z=4 c=8.30Å	Na(4a) Al(4c) S(8f) O_{I-IV}(8f) ...		Am.Min.,1972,37,1081-1088; Pov.,597.
META-ALUMINITE	$Al_2SO_4(OH)_4.5H_2O$		Mon. $P2_1$?	a=7.930Å β=106.74° b=16.879Å Z=? c=7.353Å			Zeit.Krist.,1980,151,141-152; Encyc.Miner.Nam.,195;Hölzel, 135.
METAVIVIANITE	$Fe_3(PO_4)_2(OH)_x.6H_2O$	$Fe_3^oP_2^t[O_8(H_2O)_6(OH)_x.]$ (Subs.d.Symplesite)	Tric. P $\bar{1}$	a=7.81Å α=94.7° b=9.08Å β=97.15° c=4.65Å γ=107.37°Z=?			Min.Mag.,1986,50,387-391; K/B,66;Hölzel,170.
MEYERHOFFERITE	$CaB_3O_3(OH)_5.H_2O$	$Ca^o(H_2O)\{g\}[B_2^tB^{tr}O_3(OH)_5]$ (≈Inderite)	Tric. P $\bar{1}$	a=6.63Å α=90°46' b=8.35Å β=101°56' c=6.46Å γ=86°55' Z=2	Ca(2i) O_{I-IX}(2i) B_{I-III}(2i)		SR,24,430-431;Str.Tab.,257; Pov.,477;RRW,403-404;Str. Tab.,257;Hölzel,115.
MINASRAGRITE	$VO(SO_4).5H_2O$	$V^oS^t[O_5(H_2O)_5]$	Mon. $P2_1/c$	a=6.976Å β=110.90° b=9.716Å Z=4 c=12.902Å	V(4e) S(4e) O_{I-X}(4e) ...		Acta Cryst.,1979,B35,1545-1550;Am.Min.,1973,58,531-534;RRW,407.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MOHRITE	$(NH_4)_2Fe(SO_4)_2.6H_2O$		Mon. $P2_1/c$	a=6.237Å β=106°53' b=12.613Å Z=2 c=9.292Å			Am.Min.,1965,50,805(Abs.); RRW,411;Hölzel,130;Str.Tab., 289;Pov.,595.
MOOREITE	$(Mg,Zn,Mn)_{15}(SO_4)_2(OH)_{26}.8H_2O$	$(Mg,Zn)_{11}{}^{o}Zn_4{}^{t}S_2{}^{t}[O_8(OH)_{26}(H_2O)_8]$	Mon. $P2_1/a$	a=11.147Å β=92.69° b=20.350Å Z=2 c=8.202Å	Zn_{I-II}(4e) Mn(4e) S(4e) Mg_{I-IV}(4e) Mg_V(2b) ...		Acta Cryst.,1980,B36,1304-1311;SR,46A,357;Pov.,332; Str.Tab.,293;RRW,418.
MORAESITE	$Be_2PO_4(OH).4H_2O$		Mon. C2/c	a=8.55Å β=97°41' b=36.90Å Z=12 c=7.13Å			Pov.,553;Str.Tab.,340;RRW, 418-419;Encyc.Miner.Nam., 204; Hölzel,167.
MOSESITE	$Hg_2N(Cl,SO_4,MoO_4,CO_3).H_2O$	$(H_2O)Cl$ $3\infty[N^{t}Hg_2{}^{[2]<c>}]^{c}$ (≈β-Cristobalite)	Cub. F $\bar{4}3m$	a=9.524Å Z=8	Hg(16e) Na(4a) ...		RRW,421;Pov.,201;Str.Tab., 166;SR,17,440;Hölzel,55;LF, 255.
MPORoROITE	$AlWO_3(OH)_3.2H_2O$		(Tric.) Mon. ?	a=8.27Å β=92°29' b=9.32Å Z=5 c=16.40Å			Am.Min.,1973,58,1112(Abs.); Hölzel,140.
NABAPHITE	$NaBaPO_4.9H_2O$		Cub. $P2_13$	a=10.711Å Z=4			Am.Min.,1983,68,643-644 (Abs.); Hölzel,165.
NAMUWITE	$(Zn,Cu)_4SO_4(OH)_6.4H_2O$	$(Zn,Cu)_3{}^{o}Zn^{t}S^{t}[O_4(OH)_6(H_2O)_4]$	Trig. P $\bar{3}$	a=8.331Å Z=2 c=10.54Å	Zn_I(2c) Zn_{II}(6g) S(2d) ...		Am.Min.,1996,81,238-243; Hölzel,132;Encyc.Miner.Nam., 210..
NASINITE	$Na_2B_5O_8(OH).2H_2O$	$Na_2{}^{[8]}(H_2O)_2$ {g}$[B_2{}^{t}B_3{}^{tr}O_8(OH)]$	Orth. $Pna2_1$	a=12.015Å Z=4 b=6.518Å c=11.173Å	B_{I-V}(4a) O_{I-IX}(4a) Na_{I-II}(4a) ...		Acta Cryst.,1975,B31,2405-2410;Hölzel,191;Encyc.Miner. Nam.,211.
NASTROPHITE	$Na(Sr,Ba)PO_4.9H_2O$		Cub. $P2_13$	a=10.559Å Z=4			Am.Min.,1982,67,857(Abs.); Min.Abs.,83M/4251;Hölzel, 165;K/B,160.
NATROLITE	$Na_2(Al_2Si_3)O_{10}.2H_2O$	$Na_2{}^{o}(H_2O)_2$ {3∞}$[Si_3{}^{t}Al_2{}^{t}O_{10}]$ (Zeolite)	Orth. Fdd2	a=18.272Å Z=8 b=18.613Å c=6.593Å	Si_I(8a) Si_{II}(16b) Al(16b) Na(16b) ...	$Na_2{}^{o}(H_2O)_2$ {3∞}$[Si_3{}^{t}Al_2{}^{t}O_{10}]$ NATROLITE	Acta Cryst.,1984,C40,1658-1662;LF,289;RRW,429;Pov., 356;Str.Tab.,487.
NATROPHOS-PHATE	$Na_7(PO_4)_2(F,OH).19H_2O$	$Na_7{}^{o}P_2{}^{t}[O_8(F,OH)(H_2O)_{19}]$	Cub. Fd3c	a=27.755Å Z=32	P_{I-II}(32b) Na(192h) F(16a) ...		Acta Cryst.,1974,B30,2218-2224;RRW,430-431;Am.Min., 1981,66,879(Abs.);Am.Min., 1973, 58,139(Abs.).
NEWBERYITE	$Mg(PO_3OH).3H_2O$	$Mg^{o}P^{t}[O_3OH(H_2O)_3]$	Orth. Pbca	a=10.215Å Z=8 b=10.681Å c=10.014Å	Mg(8c) P(8c) O_{I-VII}(8c)		Acta Cryst.,1967,23,418-422; RRW,434;Pov.,548;Str.Tab., 334;SR,45A,300-301.
NIAHITE	$(NH_4)(Mn,Mg,Ca)PO_4.H_2O$		Orth. $Pmn2_1$	a=5.68Å Z=2 b=8.78Å c=4.88Å			Min.Mag.,1983,47,79-80; Hölzel,162.
NICKELBLÖDITE	$Na_2(Si,Mg)(SO_4)_2.4H_2O$	$Na_2{}^{o}${g}$[(Ni,Mg)^{o}S_2{}^{t}O_8(H_2O)_4]$ (≈Blödite)	Mon. $P2_1/a$	a=10.87Å β=100.72° b=8.07Å Z=2 c=5.46Å			Enc.Min.Nam.,215;Min.Mag., 1977,41,37-41;Hölzel,130.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
NICKELBOUS-SINGAULTITE	$(NH_4)_2(Ni,Mg)(SO_4)_2.6H_2O$		Mon. $P2_1/a$	a=9.181Å β=106°57' b=12.459Å Z=2 c=6.239Å	S(4e) NH_4(4e) O_{I-IV}(4e) ...		Acta Cryst.,1963,16,823-829; Am.Min.,1986,71,1545(Abs.); Acta Cryst.,1964,17,1478-1479
NIFONTOVITE	$Ca_3(BO(OH)_2)_3.2H_2O$		Mon. B2/b	a=13.119Å β=118.40° b=13.445Å Z=4 c=9.526Å			Min.Abs.,79-2130;Am.Min., 1962,47,172(Abs.);Pov.,473; Hölzel,117.
NOBLEITE	$CaB_6O_9(OH)_2.3H_2O$	$Ca^{[10]}(H_2O)_3$ $\{2\infty\}[B_3^tB_3^{tr}(OH)_2]$ (=Tunellite)	Mon. $P2_1/a$	a=14.56Å β=111°45' b=8.01Å Z=4 c=9.83Å			Am.Min.,1961,46,560-571; Pov.,487-488;RRW,440;Str. Tab., 265;Hölzel,119.
OTWAYITE	$Ni_2CO_3(OH)_2.H_2O$		Orth. ?	a=10.18Å Z=8 b=27.4Å c=3.22Å			Am.Min.,1977,62,999-1002; Hölzel,106.
OYELITE	$Ca_{10}B_2Si_8O_{29}.12H_2O$		Orth. ?	a=11.25Å Z=1 b=7.25Å c=20.46Å			Am.Min.,1986,71,230(Abs.); Hölzel,220.
PACHNOLITE	$NaCaAlF_6.H_2O$	$Na^{[12]}\{2\infty\}[Al^o$ $\{g\}[Ca^{[8]}F_6(H_2O)]]$	Mon. C2/c ...	a=12.117Å β=90°37' b=10.414Å Z=16 c=15.680Å			Can.Min.,1983,21,561-566; RRW,455;Str.Tab.,162;Pov., 664;Hölzel,52.
PALYGORSKITE	$(Mg,Al)_2Si_4O_{10}(OH).4H_2O$	$(Mg,Al)_2^o(H_2O)_4(OH)$ $\{2\infty\}[Si_4^tO_{10}]$	Mon. C2/m	a≈12.7Å β≈95° b≈17.9Å Z=4 c≈5.2Å		$(Mg,Al)_2^o(H_2O)_4(OH)$ $\{2\infty\}[Si_4^tO_{10}]$ PALYGORSKITE	RRW,457;Hölzel,236;Pov.,420; Str.Tab.,466;Am.Min.,1977,62, 784-792;RRW,457.
PARABARIO-MICROLITE	$BaTa_4O_{10}(OH)_2.2H_2O$	$Ba^{cb}\square_3{}^{cb}Ta_4{}^o$ $[O_{10}(H_2O)_2(OH)_2\square_2]^{Qs}$ (Dist.defect d.Pyrochlore)	Trig. R 3m	a=7.4290Å Z=3 c=18.505Å	Ba(3b) Ta_I(3a) Ta_{II}(9b)... (rhomb.descr.)		Can.Min.,1986,24,655-663;LF, 140;Hölzel,68.
PARABRANDTITE	$Ca_2Mn(AsO_4)_2.2H_2O$	$Ca_2{}^{[8]}Mn^oAs_2{}^t$ $\{2\infty\}[O_8(H_2O)_2]$ (=Talmessite)	Tric. P1 ...	a=5.89Å α=96.77° b=7.031Å β=109.32° c=5.64Å γ=108.47° Z=1			Am.Min.,1988,73,1496(Abs.); Hölzel,164.
PARABUTLERITE	$FeSO_4(OH).2H_2O$	$Fe^oS^t[O_4(OH)(H_2O)_2]$	Orth. Pmnb	a=7.38Å Z=8 b=20.13Å c=7.22Å	Fe(8d) S_{I-II}(4c) O_{I-IV}(8d)O_{V-X}(4c)		Bull.Min.,1970,93,185-189;SR, 35A,575-576;Hölzel,134;Str. Tab.,293;Pov.,599.
PARANATROLITE	$Na_2(Al_2Si_3)O_{10}.3H_2O$		Orth. Fmm2 ?	a=19.07Å Z=8 b=19.03Å c=6.58Å			Can.Min.,1980,18,85-88; Encyc.Miner.Nam.,230;Hölzel, 243.
PARASCHOLZITE	$CaZn_2(PO_4)_2.2H_2O$		Mon. Cc ...	a=17.864Å β=106°27' b=7.422Å Z=4 c=6.674Å			Am.Min.,1981,66,843-851; Hölzel,162.
PENKVILKSITE	$Na_4Ti_2Si_8O_{22}.5H_2O$		? Pnca ?	a=7.48Å γ=90° b=8.77Å c=?			Am.Min.,1975,60,340-341 (Abs.);Hölzel,223;Encyc.Miner. Nam.,234.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
PENTAHYDRO-BORITE	$CaB_2O(OH)_6.2H_2O$	$Ca^{[7]}(H_2O)_2$ {g}$[B_2^tO(OH)_6]$	Tric. P $\bar{1}$	a=7.845Å α=111.62° b=6.525Å β=111.19° c=8.124Å γ=73.44° Z=2	Ca(2i) B_{I-II}(2i) O_{I-IX}(2i) H_{I-X}(2i)		Sov.Phys.Cryst.,1977,22,35-36;SR,43A,227;Hölzel,114; Pov.,471;Min.Abs.,74-959.
PHARMACOLITE	$Ca(AsO_3OH).2H_2O$	{2∞}$[Ca^{[8]}As^tO_4H(H_2O)_2]$ (≈Gypsum)	Mon. I a	a=5.9745Å β=114°50' b=15.4340Å Z=4 c=6.2797Å	Ca(4a) As(4a) O_{I-IV}(4a) $(H_2O)_{I-II}$(4a)		Acta Cryst.,1969,B25,1544-1550;SR,34A,335-336;SR, 37A,302;Pov.,524;Am.Min., 1979,64,1248-1254;LF,248.
PHILIPSBURGITE	$(Cu,Zn)_6(AsO_4,PO_4)_2(OH)_6.H_2O$	$(Cu,Zn)_6^o(As,P)_2^t[O_8(OH)_6(H_2O)]$ (=Veszelyite)	Mon. $P2_1/c$	a=12.33Å β=96.92° b=9.20Å Z=4 c=10.69Å			Can.Min.,1985,23,255-258; Hölzel,167.
PHOSPHO-PHYLLITE	$Zn_2(Fe,Mn)(PO_4)_2.4H_2O$	$Zn^{[6]}Zn^tP_2^t[O_8(H_2O)_4]$ (≈Hopeite)	Mon. $P2_1/c$	a=10.378Å β=121.14° b=5.084Å Z=2 c=10.553Å	Fe(2a) Zn(4e) O_{I-VI}(4e)H_{I-IV}(4e)		Am.Min.,1977,62,812-817;K/B, 57-58;SR,26,463;SR,43A,261; Pov.,532-533;RRW,477;K/B, 57-58.
PHOSPHORRÖ-SSLERITE	$Mg(PO_3OH).7H_2O$	$Mg^oP^t[O_3(OH)(H_2O)_7$ (≈Rösslerite)	Mon. C2/c	a=6.574Å β=95°11' b=25.36Å Z=8 c=11.32Å			Zeit.Krist.,1973,137,246-255; RRW,478;Pov.,548;Str.Tab., 336;Hölzel,163.
PICKERINGITE	$MgAl_2(SO_4)_4.22H_2O$		Mon. P2	a=20.8Å β=96°33' b=24.2Å Z=4 c=6.18Å			Str.Tab.,285;Pov.,753,598; RRW,478;Hölzel,129.
PICROMERITE	$K_2Mg(SO_4)_2.6H_2O$	$K_2^{[7]}Mg^oS_2^t[O_8(H_2O)_6]$ (=Boussingaultite)	Mon. $P2_1/a$	a=9.072Å β=104°50' b=12.212Å Z=2 c=6.113Å	Mg(2a) K(4e) S(4e) O_{I-IV}(4e) H_{I-VI}(4e) ...		Zeit.Krist.,1965,122,161-174; RRW,479;Str.Tab.,563,289; Pov.,595;Hölzel,129.
PIMELITE	$Ni_3Si_4O_{10}(OH)_2.H_2O$	$Ni_3^o(H_2O)(OH)_2$ {2∞}$[Si_4^tO_{10}]^{(2h)c}$ (≈Talc)	?	?			Am.Min.,1979,64,615-625; RRW,481;Str.Tab.,446;Pov., 754;Hölzel,227;LF,227,232.
PIRSSONITE	$Na_2Ca(CO_3)_2.2H_2O$	{2∞}[$Na_2^{[6]}Ca^{[8]}(H_2O)_2$ {g}$[C^{tr}O_3]_2$]	Orth. Fdd2	a=11.32Å Z=8 b=20.06Å c=6.00Å	Ca(8a) Na(16b) O_{I-IV}(16b) C(16b) H_{I-II}(16b)		Acta Cryst.,1967,23,763-766; SR,32A,416-417;Pov.,619;Str. Tab.,245;Hölzel,104.
PLANCHÉITE	$Cu_8(Si_4O_{11})_2(OH)_4.H_2O$	$Cu_8^{[5/4]}(OH)_4(H_2O)$ {1∞}$[Si_8^tO_{22}]^{2.cx}$ (≈Shattuckite, ≈Tremolite)	Orth. Pcnb	a=19.043Å Z=4 b=20.129Å c=5.269Å	Cu_{I-IV}(8d) Si_{I-IV}(8d) O_{I-XIII}(8d) O_{XIV}(4c)		Am.Min.,1977,62,491-502; Pov.,413;LF,208;SR,43A,322-323;Hölzel,214;RRW,483;Str. Tab.,416.
POKROVSKITE	$Mg_2CO_3(OH)_2.0,5H_2O$		Mon. $P2_1/a$	a=9.43Å β=96.6° b=12.27Å Z=4 c=3.395Å			Am.Min.,1985,70,217(Abs.); Hölzel,106.
POLLUCITE	$(Cs,Na)(AlSi_2)O_6.nH_2O$	$(Cs,Na)(H_2O)_n$ {3∞}$[Si_2^tAl^tO_6]$ (Zeolite)	Cub. I a3d	a=13.69Å Z=16	Cs(16b) (Si,Al)(48g) O(96h) ...		Zeit.Krist.,1969,129,280-302; LF,293;RRW,487;Can.Min., 1994,32,69-80.
POSNJAKITE	$Cu_4SO_4(OH)_6.H_2O$	{2∞}$[Cu_4^oS^tO_4(OH)_6H_2O)]$	Mon. Pa	a=10.578Å β=117.98° b=6.345Å Z=2 c=7.863Å	Cu_{I-IV}(2a) S(2a) O_{I-XI}(2a) ...		Zeit.Krist.,1979,149,249-257; SR,45A,335-336;RRW,490; Pov., 754,598;Str.Tab.,292.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
POTASSIUM ALUM	$KAl(SO_4)_2.12H_2O$	$K^{o}Al^{o}S_2^{t}[O_8(H_2O)_{12}]$	Cub. Pa3	a=12.157Å Z=4	K(4b) Al(4a) S(8c) O_I(8c) O_{II-III}(24d) ...		Acta Cryst.,1967,22,793-800; SR,32A,339-343;Pov.,597; RRW,490.
PROSPERITE	$CaZn_2(AsO_4)_2.H_2O$	$\{3\infty\}[Ca^{[9]}Zn_2^{[5]}As_2^{t}O_8(H_2O)]$	Mon. C2/c	a=19.238Å β=104.47° b=7.731Å Z=8 c=9.765Å	Ca(8f) Zn_{I-II}(8f) As_{I-II}(8f) O_{I-IX}(8f)		Zeit.Krist.,1982,158,33-42; Hölzel,152.
RAITE	$(Na,Ca)_4(Mn,Ti,Fe)_3Si_8(O,OH)_{24}.9H_2O$		Orth. C222	a=30.6Å Z=4 b=5.31Å c=18.20Å			Am.Min.,1973,58,1113(Abs.); Hölzel,231.
RAMSBECKITE	$(Cu,Zn)_{15}(SO_4)_4(OH)_{22}.6H_2O$		Mon. $P2_1/a$	a=16.066Å β=90.20° b=15.577Å Z=2 c=7.102Å			Am.Min.,1987,72,225(Abs.); Hölzel,132;Am.Min.,1989,74, 505(Abs.).
RANSOMITE	$CuFe_2(SO_4)_4.6H_2O$	$Cu^{o}Fe_2^{o}S_4^{t}[O_{16}(H_2O)_6]$ (≈Römerite)	Mon. $P2_1/a$	a=4.811Å β=93°1' b=16.217Å Z=2 c=10.403Å	Cu(2a) Fe(4e) Si_{I-II}(4e) O_{I-VIII}(4e) ...		Am.Min.,1970,55,729-734; RRW,510;Pov.,596;Str.Tab., 285;SR,35A,436-437.
REDINGTONITE	$(Fe,Mg,Ni)(Cr,Al)_2(SO_4)_4.22H_2O$	$(Fe,Mg,Ni)^{o}(Cr,Al)_2^{o}S_4^{t}[O_{16}(H_2O)_{22}]$ (≈Halotrichite)	(Mon.) P2	a=20.8Å β=°96'34 b=24.2Å Z=4 c=6.18Å			Pov.,755,598;Str.Tab.,285; RRW,512;Hölzel,129.
RHOMBOCLASE	$HFe(SO_4)_2.4H_2O$		Orth. Pnma	a=9.73Å Z=4 b=18.29Å c=5.43Å			Min.Mag.,1974,39,610-612; SR,41A,350;Pov.,604;Str.Tab., 284;Hölzel,128.
RIVERSIDEITE	$Ca_5Si_6O_{16}(OH)_2.2H_2O$	$Ca_{10}(OH)_4\{2\infty\}[Si_{12}^{t}O_{31}(H_2O)_4]$ (≈Tobermorite)	Orth. $C222_1$	a=11.3Å Z=4 b=7.3Å c=18.0Å			Pov.,435;Min.Mag.,1954,30,29 3-305; Hölzel,220;RRW,521.
ROGGIANITE	$Ca_{15}(Si,Al,Be)_{48}O_{90}(OH)_{16}.34H_2O$		Tet. I 4/mcm	a=18.33Å Z≈1 c=9.16Å			Am.Min.,1992,77,452(Abs.); Am.Min.,1983,68,852(Abs.); Min.Mag.,1988,52,201-206.
ROSELITE	$Ca_2(Co,Mg)(AsO_4)_2.2H_2O$	$Ca_2^{[7]}\{1\infty\}[(Co,Mg)^{o}As_2^{t}O_8(H_2O)_2]$ (=Brandtite)	Mon. $P2_1/c$	a=5.801Å β=107.42° b=12.898Å Z=2 c=5.617Å			SR,43A,272-273;Pov.,519-520;Str.Tab.,337;RRW,526; Hölzel,163.
RÖSSLERITE	$Mg(AsO_3OH).7H_2O$	$Mg^{o}As^{t}[O_3OH(H_2O)_7]$	Mon. C2/c	a=6.6918Å β=95.15° b=25.744Å Z=8 c=11.538Å	Mg_{I-II}(4e) As(8f) O_{I-IV}(8f) ...		Acta Cryst.,1973,B29,286-292; Zeit.Krist.,1973,137,194-219; SR,39A,296-297;Pov.,516.
ROSTITE	$AlSO_4(F,OH).5H_2O$		Orth. Pcab	a=11.181Å Z=8 b=13.048Å c=11.885Å			Am.Min.,1981,66,1102-1103 (Abs.);Hölzel,134;Am.Min., 1979,64,1331(Abs.).
ROUSEITE	$Pb_2Mn(AsO_3)_2.2H_2O$		Tric. P1 ...	a=6.36Å α=97.3° b=7.29Å β=114.2° c=5.54Å γ=106.0° Z=1			Am.Min.,1986,71,1034-1036; Hölzel,91.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SACROFANITE	$(Na,Ca)_9(Si,Al)_{12}O_{24}(OH,SO_4)_4.nH_2O$		Hex. $P6_3mc$ ...	a=12.865Å Z=14 c=72.240Å			Am.Min.,1981,66,1100(Abs.); Hölzel,240.
SANTITE	$KB_5O_6(OH)_4.2H_2O$		Orth. Aba2	a=11.10Å Z=4 b=11.18Å c=9.08Å			Am.Min.,1971,56,636(Abs.); Hölzel,116;RRW,536;Pov.,479.
SASAITE	$(Al,Fe)_6(PO_4,SO_4)_5(OH)_3.36H_2O$		Orth. ?	a=21.50Å Z=20 ? b=30.04Å c=92.06Å			Min.Mag.,1978,42,401-404; Hölzel,169.
SBORGITE	$NaB_5O_6(OH)_4.3H_2O$		Mon. C2/c	a=11.119Å β=112°50' b=16.474Å Z=8 c=13.576Å	$Na_{I\text{-}II}$(4e) $B_{I\text{-}V}$(8f) $O_{I\text{-}XIII}$(8f)		Acta Cryst.,1972,B28,3559-3567;SR,38A,292-293;RRW, 540;Pov.,479;Str.Tab.,259.
SCARBROITE	$Al_5CO_3(OH)_{13}.5H_2O$	$Al_5{}^{o}C^{tf}[O_3(OH)_{13}(H_2O)_5]^{h}$	(Tric.) ?	a=9.94Å α=98.7° b=14.88Å β=96.5° c=26.47Å γ=89.0° Z=9 ?			Min.Mag.,1980,43,615-618; Min.Mag.,1960,32,353-362; Am.Min.,1958,43,384(Abs.); RRW,541;Pov.,328;Hölzel,107.
SCHOLZITE	$CaZn_2(PO_4)_2.2H_2O$	$Ca^{o}Zn_2{}^{t}P_2{}^{t}[O_8(H_2O)_2]$	Orth. $Pbc2_1$	a=17.149Å Z=12 b=22.236Å c=6.667Å	$Ca_{I\text{-}III}$(4a) $Zn_{I\text{-}VI}$(4a) ...		Am.Min.,1975,60,1019-1022; Am.Min.,1981,66,843-851; RRW,545;Pov.,547Str.Tab., 330.
SCHULENBERGITE	$(Cu,Zn)_7(SO_4,CO_3)_2(OH)_{10}.3H_2O$		Trig. P3 ...	a=8.249Å Z=1 c=7.183Å			Am.Min.,1985,70,438(Abs.); Hölzel,132.
SCOLECITE	$Ca(Si_3Al_2)O_{10}.3H_2O$	$Ca^{[7]}(H_2O)_3\{3\infty\}[Si_3{}^{t}Al_2{}^{t}O_{10}]$ (≈Natrolite,Zeolite)	Mon. Cc	a=18.508Å β=90.64° b=18.981Å Z=4 c=6.527Å	Ca(4a) $Si_{I\text{-}III}$(4a) ...	$Ca^{[7]}(H_2O)_3\{3\infty\}[Si_3{}^{t}Al_2{}^{t}O_{10}]$ SCOLECITE	Zeit.Krist.,1984,166,219-223; Acta Cryst.,1979,B35,1877-1880;Pov.,356;LF,291.
SENEGALITE	$Al_2PO_4(OH)_3.H_2O$	$Al^{o}Al^{[5o7]}P^{t}[O_4(OH)_3(H_2O)]$	Orth. $P2_1nb$	a=7.675Å Z=4 b=9.711Å c=7.635Å	$Al_{I\text{-}II}$(4a) P(4a) $O_{I\text{-}IV}$(4a) ...		Am.Min.,1979,64,1243-1247; K/B,60-61;Am.Min.,1977,62, 595(Abs.);SR,45A,303-304.
SEPIOLITE	$Mg_4Si_6O_{15}(OH)_2.6H_2O$	$Mg_4{}^{o}(H_2O)_6(OH)_2\{2\infty\}[Si_6{}^{t}O_{15}]$ (≈Palygorskite)	Orth. Pncn	a=13.4Å Z=4 b=26.8Å c=5.28Å	Mg_{IV}(4c) O_I(4d) O_{VIII}(8e)$Si_{I\text{-}III}$(8e) ...	$Mg_4{}^{o}(H_2O)_6(OH)_2\{2\infty\}[Si_6{}^{t}O_{15}]$ SEPIOLITE	SR,20,436-437;SR,21,457; Pov.,420-421;Str.Tab.,466; LF,241.
SHAFRANOVSKITE	$(Na,K)_6(Mn,Fe)_3Si_9O_{24}.6H_2O$		Trig. $P3_1m$ ...	a=14.58Å Z=6 c=21.01Å			Am.Min.,1983,68,644(Abs.); Hölzel,247.
SHERWOODITE	$Ca_{4.5}AlV_{14}O_{40}.28H_2O$	$Ca_{4.5}(H_2O)_{28}\{3\infty\}[Al^{o}V_{14}{}^{o}O_{40}]$	Tet. $I\,4_1amd$	a=28.06Å Z=8 c=13.56Å	Al(8c) Ca(16g) $V_{I\text{-}II}$(16h) V_{III}(16f)$V_{IV\text{-}V}$(32i) ...		Am.Min.,1978,63,863-868;Am. Min.,1958,43,749-755;Pov., 501-502;Str.Tab.,222;SR,44A, 202-203.
SMOLIANINOVITE	$(Co,Ni,Mg,Ca)_3(Fe^{+3},Al)_2(AsO_4)_4.11H_2O$		Orth. ?	a=6.40Å Z=2 ? b=11.72Å c=21.9Å			Am.Min.,1974,59,1141;Hölzel, 164.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SODDYITE	$(UO_2)_2SiO_4.2H_2O$	$(H_2O)_2\{1\infty\}[(UO_2)_2 Si^tO_4]$	Orth. Fddd	a=8.32Å Z=8 b=11.21Å c=18.71Å			Am.Min.,1981,66,610-625; Hölzel,195;RRW,568;Pov.,456; Str.Tab.,387.
SODIUM ALUM	$NaAl(SO_4)_2.12H_2O$	$Na^oAl^oS_2^t[O_8(H_2O)_{12}]$	Cub. Pa3	a=12.213Å Z=4	Na(4b) S(8c) O_I(8c) O_{II}(24d) ...		Acta Cryst.,1967,22,182-187; Pov.,597-598;SR,32A,339-343;Hölzel,129.
SONORAITE	$FeTeO_3(OH).H_2O$		Mon. $P2_1c$	a=10.984Å β=108.49° b=10.268Å Z=8 c=7.917Å			Am.Min.,1968,53,1828-1832; SR,40A,311;RRW,570;Pov., 565;Hölzel,93.
SPENCERITE	$Zn_4(PO_4)_2(OH)_2.3H_2O$	$Zn_2^oZn_2^tP_2^t[O_8(OH)_2(H_2O)_3]$	Mon. P2/c	a=10.448Å β=116°44' b=5.282Å Z=2 c=11.208Å	Zn_I(2a) Zn_{II}(2e) Zn_{III}(4g) P(4g) ...		Min.Mag.,1972,38,687-692; SR,31A,190-191;Pov.,549-550;Str.Tab.,341.
STANLEYITE	$VOSO_4.6\ H_2O$		Orth. ?	a=12.12Å Z=8 b=9.71Å c=14.92Å			Hölzel,135;Min.Mag.,1982,45, 163-166.
STELLERITE	$Ca(Si_7Al_2)O_{18}.7H_2O$	$Ca^{[6]}(H_2O)_7\{3\infty\}[Si_7^tAl_2^tO_{18}]$ (≈Stilbite,Zeolite)	Orth. Fmmm	a=13.599Å Z=8 b=18.222Å c=17.863Å			SR,41A,401;LF,299;Pov.,354; Str.Tab.,490;SR,45A,375;Am. Min.,1968,53,511(Abs.);Bull. Min.,1975,98,11-18.
STILPNOMELANE	(K,Ca,Na) $(Fe,Mg,Al)_{12}$ $(Si,Al)_{16}(O,OH)_{54}.nH_2O$		Tric. P $\bar{1}$	a≈21.724Å α=124° b≈21.724Å β=96° c=17.740Å γ=120° Z=6?			Min.Mag.,1972,38,693-711; Pov.,436;Str.Tab.,442;RRW, 583-584;Min.Mag.,1978,42, 361-368.
STOKESITE	$CaSnSi_3O_9.2H_2O$	$Ca^{[8]}Sn^{[6]}(H_2O)_2\{1\infty\}[Si_3^tO_9]$	Orth. Pnna	a=14.465Å Z=4 b=11.625Å c=5.235Å	Ca(4d) Sn(4b) Si_I(4d) Si_{II}(8e) ...		Min.Mag.,1963,33,615-617; SR,28,262-263;Pov.,419;Str. Tab.,428.
STRASHIMIRITE	$Cu_4(AsO_4)_2(OH)_2.2.5H_2O$	$Cu_4^oAs_2^t[O_8(OH)_2(H_2O)_{2.5}]$	Mon. P2/m ...	a=9.71Å β=97°12' b=18.85Å Z=6 c=8.94Å			Am.Min.,1969,54,1221(Abs.); Pov.,516;Str.Tab.,340;RRW, 585-586;Hölzel,167.
STRÄTLINGITE	$Ca_2Al_2SiO_7.8H_2O$		Trig. R $\bar{3}$m	a=5.753Å Z=3 c=37.82Å			Am.Min.,1992,77,674-675; Hölzel,192;Am.Min.,1977,62, 395(Abs.).
STRINGHAMITE	$CaCuSiO_4.H_2O$	$Ca^{[7]}H_2O\{2\infty\}[Cu^{sq}\{g\}[Si^tO_4]]$	Mon. $P2_1/c$	a=5.030Å β=102.96° b=16.135Å Z=4 c=5.343Å			Min.Abs.,85M/3792;Am.Min., 1976,61,189-192;Hölzel,191.
STRUVITE	$(NH_4)MgPO_4.6H_2O$	$Mg^oP^t(NH_4)[O_4(H_2O)_6]$	Orth. $Pmn2_1$	a=6.955Å Z=2 b=6.142Å c=11.218Å	P(2a) Mg(2a) N(2a) O_{I-II}(2a) O_{III}(4b) ...		Acta Cryst.,1986,B42,253-258; SR,55A,329-330;Pov.,548;Str. Tab.,337;RRW,588-589.
SUOLUNITE	$Ca_2Si_2O_5(OH)_2.H_2O$		Orth. Fdd2	a=11.02Å Z=8 b=19.74Å c=6.08Å	Ca(16b) Si(16b) O_{I-II}(8a) O_{III-V}(16b)		SR,31A,236;Min.Abs.,75-871; Am.Min.,1967,52,560-561; Pov.,403;Str.Tab.,579,391; RRW, 592.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SYNGENITE	$K_2Ca(SO_4)_2.H_2O$		Mon. $P2_1/m$	a=6.225Å β=104.153° b=7.127Å Z=2 c=9.727Å	Ca(2e) K(4f) S_{I-II}(2e) O_{I-V}(2e) ...		Sov.Phys.Cryst.,1978,23,141-143;SR,44A,271-272;SR,32A,335-336;Pov.,594;Str.Tab.,291;SR,33A,518-520.
TALMESSITE	$Ca_2Mg(AsO_4)_2.2H_2O$	$Ca_2^{[8]}Mg^oAs_2^t[O_8(H_2O)_2]$ (=Parabrandtite)	Tric. $P\bar{1}$	a=5.874Å α=97.3° b=6.943Å β=108.7° c=5.537Å γ=108.1° Z=1			SR,43A,356;RRW,601-602; Pov.,519-520;Str.Tab.,337;Am. Min.,1988,73,1496(Abs.).
TAMARUGITE	$NaAl(SO_4)_2.6H_2O$	$Na^oAl^oS_2^t[O_8(H_2O)_6]$	Mon. $P2_1/a$	a=7.353Å β=95.2° b=25.225Å Z=4 c=6.097Å	Na(4e) Al(4e) O_{I-VIII}(4e) S_{I-II} (4e)...		Am.Min.1969,54,19-30;SR, 34A,310-311;Hölzel,130;Pov., 596;Str.Tab.,286;RRW,602.
THOMETZEKITE	$Pb(Cu,Zn)_2(AsO_4)_2.2H_2O$		?	?			Am.Min.,1988,73,931(Abs.); Hölzel,162.
THOMSENOLITE	$NaCaAlF_6.H_2O$	$Na^{[12]}\{3\infty\}[Ca^{[8]}Al^o(H_2O)F_6]$	Mon. $P2_1/c$	a=5.583Å β=96°26' b=5.508Å Z=4 c=16.127Å	Ca(4e) Na(4e) Al(4e) F_{I-VI}(4e) O(4e)		Acta Cryst.,1967,23,162-166; SR,32A,164-166;Pov.,664; Str.Tab.,162;RRW,613.
THOROSTEENS-TRUPINE	$(Ca,Th,Mn)_3Si_4O_{11}F.6H_2O$		Amorph. Metamict	-			Am.Min.1963,48,433-434 (Abs.);Pov.,761,370;RRW,616.
TIKHONENKOVI-TE	$SrAlF_4(OH).H_2O$	$Sr^{[9]}Al^o[F_4(OH)(H_2O)]$	Mon. $P2_1/c$	a=5.02Å β=102°43' b=10.62Å Z=4 c=8.73Å	Sr(4e) Al(4e) (H_2O)(4e) F_{I-IV}(4e) (OH)(4e)		SR,32A,166-167;Am.Min., 1964,49,1774-1775(Abs.); Pov.,658;Str.Tab.,161;RRW, 617-618.
TINCALCONITE	$Na_2B_4O_5(OH)_4.3H_2O$	$\{g\}[B_2^tB_2^{tr}O_5(OH)_4]$ $\{3\infty\}[Na^o_2(H_2O)_3]$	Trig. R32	a=11.09Å c=21.07Å Z=9	Na_I(9e) Na_{II}(3b) Na_{III}(6c)B_{I-II}(18f) O_I(9d)...		Am.Min.,1973,58,523-530; SR,39A,263;Pov.,478-479; Str.Tab.,258;RRW,619.
TINTICITE	$Fe_4(PO_4)_3(OH)_3.5H_2O$		Mon. P2...	a=13.65Å β=91.2° b=6.542Å Z=3 c=12.31Å			Am.Min.,1989,74,1404(Abs.); Pov.,548-549;Str.Tab.,343; RRW, 619;Hölzel,168.
TOBERMORITE	$Ca_5Si_6O_{16}(OH)_2.xH_2O$		Orth. $C222_1$	a=11.3Å Z=4 b=7.33Å c=22.6Å			Str.Tab.,424;RRW,626;Zeit. Krist.,1988,182,114-116; SR, 20,412;Pov.,435;Hölzel,220.
TRUSCOTTITE	$(Ca,Mn)_{14}Si_{24}O_{58}(OH)_8.2H_2O$	$(Ca,Mn)_{14}^{[6]}Si_{24}^t[O_{58}(OH)_8(H_2O)_2]$	Trig. $P\bar{3}$	a=9.731Å c=18.84Å Z=1			Min.Mag.,1979,43,333-336; Hölzel,236;Pov.,434-435; RRW,630.
TSCHERMIGITE	$NH_4Al(SO_4)_2.12H_2O$	$Al^oS_2^tO_8(H_2O)_{12}$ $\{g\}[NH_4]^{[6]}$	Cub. Pa3	a=12.242Å Z=4	Al(4a) S(8c) N(8c) O_I(8c) O_{II}(24d) ...		Zeit. Krist.,1981,157,147-166; Hölzel,129;Pov.,597;Str.Tab., 286.
TSUMCORITE	$Pb(Zn,Fe)_2(AsO_4)_2.(OH,H_2O)_2$	$Pb^{[8]}(Zn,Fe)_2^oAs_2^t[O_8(OH,H_2O)_2]$ (≈Brackebuschite)	Mon. C2/m	a=9.124Å β=115°17' b=6.329Å Z=2 c=7.577Å	Pb(2a) (Zn,Fe)(4f) As(4i) ...		Acta Cryst.,1973,B29,2789-2794;SR,39A,299-300;RRW, 631Min.Abs.,72-1405.

Table 212

$A_pB_qC_rD_s.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
TUNELLITE	$SrB_6O_9(OH)_2.3H_2O$	$Sr^{[10]}(H_2O)_3$ $\{2\infty\}[B_3^tB_3^{tr}O_9(OH)_2$ (=Nobleite)	Mon. $P2_1/a$	a=14.390Å β=114°2' b=8.213Å Z=4 c=9.934Å	$B_{I\text{-}VI}$(4e) Sr(4e) $O_{I\text{-}XIV}$(4e)		Am.Min.,1964,49,1549-1568; SR,29,390-391;Pov.,487-488; Str.Tab.,265;RRW,633.
TYRETSKITE-1Tc	$Ca_2B_5O_9(OH).H_2O$		Tric. P $\bar{1}$...	a=6.44Å α=61°46' b=6.45Å β=60°15' c=6.41Å γ=73°30' Z=1			Am.Min.,1968,53,2084-2087; Pov.,488-489;Hölzel,118;Str. Tab.,264;RRW,635.
UMBITE	$K_2ZrSi_3O_9.H_2O$		Orth. $P2_12_12_1$	a=10.208Å Z=4 b=13.241Å c=7.174Å			Am.Min.,1984,69,813-814; Am.Min.,1982,67,416-417 (Abs.);Hölzel,205.
UMOHOITE	$(UO_2)MoO_4.4H_2O$	$U^{[6]}Mo^{[6]}[O_6(H_2O)_4]$	Mon. $P2_1/m$...	a=14.30Å β=99°5' b=7.50Å Z=4 c=6.38Å			RRW,639;Pov.,325-326; Str.Tab.,302;SR,28,225-226; Hölzel,141.
VANALITE	$NaAl_8V_{10}O_{38}.30H_2O$		Mon. P2/m...	a=12.591Å β=95.30° b=10.70Å Z=2 c=10.923Å			Am.Min.,1972,57,597(Abs.); Hölzel,88.
VANTASSELITE	$Al_4(PO_4)_3(OH)_3.$ $9H_2O$		Orth. Pmam...	a=10.528Å Z=8 b=16.541Å c=20.373Å			Am.Min.,1988,73,931(Abs.); Hölzel,168.
VASHEGYITE	$Al_{11}(PO_4)_9(OH)_6.$ $38H_2O$		Orth. Pnma ?	a=10.754Å Z=4 b=14.971Å c=22.675Å			Hölzel,168;Min.Mag.,1974,39, 802-806:Encyc.Miner.Nam., 318
VESZELYITE	$(Cu,Zn)_3PO_4(OH)_3.$ $2H_2O$	$(Cu,Zn)_3^oP^t$ $[O_4(OH)_3(H_2O)_2]$ (=Kipushite)	Mon. $P2_1/a$	a=9.828Å β=103.18° b=10.224Å Z=4 c=7.532Å	$(Cu,Zn)_{I\text{-}II}$(4e) Zn(4e) P(4e) $O_{I\text{-}IV}$(4e)...		Am.Min.,1974,59,573-581; K/B,91-92;Pov.,549-550; Str.Tab.,346;RRW,652.
VINOGRADOVITE	$(Na,Ca)_4Ti_4Si_8O_{26}.$ $(H_2O),K_3)$	$3\infty[(Na,Ca)_4^{[8]}Ti_4^oSi_8^t$ $O_{26}(H_2O,K_3)]$ (≈Rinkite)	Mon. C2/c	a=24.50Å β=100.13° b=8.662Å Z=2 c=5.211Å	Na_i(8f) Ti(8f) $Si_{I\text{-}II}$(8f)...		Zeit.Krist.,1992,200,237-245; Pov.,426-427;Sov.Phys.Cryst., 1984,29,403-406.
VOLBORTHITE	$Cu_3V_2O_7(OH)_2.$ $2H_2O$	$Cu_3^oV_2^t$ $[O_7(OH)_2(H_2O)_2]$	Mon. C2...	a=10.604Å β=94.81° b=5.879Å Z=2 c=7.202Å			Am.Min.,1974,59,372-373; Pov.,498;Hölzel,159.
VOLKOVSKITE	$Ca(B_3O_4(OH)_2)_2.$ H_2O		Mon. $P2_1$	a=6.575Å β=119°5' b=23.921Å Z=4? c=6.522Å			Can.Min.,1990,28,351-356. Am.Min.,1966,51,1550(Abs.); Str.Tab.,261,Pov.,487-488.
VYACHESLAVITE	$UPO_4(OH).2.5H_2O$		Orth. Cmcm...	a=6.96Å Z=6 b=9.10Å c=12.38Å			Am.Min.,1985,70,878(Abs.); Hölzel,178.
WAIRAKITE	$Ca(Al_2Si_4)O_{12}.2H_2O$	$Ca^{[6]}(H_2O)_2$ $\{3\infty\}[Al_2^tSi_4^tO_{12}]$ (≈Analcime,Zeolite)	Mon. I 2/a	a=13.692Å β=90.5° b=13.643Å Z=8 c=13.560Å	Ca(8j) $(Al,Si)_{I\text{-}VI}$ (8j) $O_{I\text{-}XII}$(8j)...		Am.Min.,1979,64,993-1001; Pov.,351-352;Str.Tab.,471; RRW, 659-660.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
WARDSMITHITE	$Ca_5Mg(B_4O_7)_6.30H_2O$		Hex. ?	?			Am.Min.,1970,55,349-357; RRW,662;Pov.,491;Hölzel,115.
WAVELLITE	$Al_3(PO_4)_2(OH,F)_3.5H_2O$	$Al_3{}^{o}P_2{}^{t}$ $[O_8(OH,F)_3(H_2O)_5]$	Orth. Pcmn...	a=9.621Å Z=4 b=17.363Å c=6.994Å	Al_I(4c) Al_{II}(8d) P(8d) $O_{I\text{-}IV}$(8d) ...		Zeit.Krist.,1968,127,21-33;SR, 33A,404-405;Pov.,549;Str. Tab.,343;RRW,663.
WENDWILSONITE	$Ca_2(Mg,Co)(AsO_4)_2.2H_2O$	$Ca^{[7]}\{1\infty\}[(Mg,Co)^{o}As_2{}^{t}O_8(H_2O)_2]$ (=Brandtite)	Mon. $P2_1/c$	a=5.806Å β=107°24' b=12.912Å Z=2 c=5.623Å			Am.Min.,1987,72,217-221; Hölzel,163.
WHITMOREITE	$Fe_3(PO_4)_2(OH)_2.4H_2O$	$Fe_3{}^{o}P_2{}^{t}$ $[O_8(OH)_2(H_2O)_4]^{c/h}$ (Basic str.Arthurite)	Mon. $P2_1/c$	a=10.00Å β=93.8° b=9.73Å Z=2 c=5.471Å	Fe_I(2a) Fe_{II}(4e) P(4e) $O_{I\text{-}IV}$(4e) ...		Am.Min.,1974,59,900-905;K/B, 39-40;SR,40A,246;K/B,39-40.
WOODWARDITE	$(Cu,Al)_8SO_4(OH)_{16}.nH_2O$		Trig. ?	?			Min.Mag.,1976,43,644-647; RRW,676; Hölzel,134.
WROEWOLFEITE	$Cu_4SO_4(OH)_6.2H_2O$	$Cu_4{}^{o}S^{t}$ $[O_4(OH)_6(H_2O)_2]$	Mon. Pc	a=6.045Å β=93.39° b=5.646Å Z=2 c=14.337Å	$Cu_{I\text{-}IV}$(2a) S(2a) $O_{I\text{-}XII}$(2a)		Am.Min.,1985,70,1050-1055; Min.Mag.,1975,40,1-5; Hölzel,132.
XITIESHANITE	$FeSO_4Cl.6H_2O$		Mon. $P2_1/a$	a=14.102Å β=111.266° b=6.908Å Z=4 c=10.673Å			Am.Min.,1984,69,1194(Abs.); Hölzel,135.
YAROSLAVITE	$Ca_3Al_2F_{10}(OH)_2.H_2O$		Orth. ?	a=8.74Å Z=4 b=5.53Å c=4.51Å			Am.Min.,1966,51,1546-1547; Hölzel,54;RRW,680;Pov.,658; Str.Tab.,161.
YOFORTIERITE	$(Mn,Mg)_5Si_8O_{20}(OH)_2.8\text{-}9H_2O$	$(Mn,Mg)_5{}^{o}(H_2O)_{8\text{-}9}(OH)_2\{2\infty\}[Si_8{}^{t}O_{20}]$ (≈Palygorskite)	Mon. Pn	?			Hölzel,236;Encyc.Miner.Nam., 338;Can.Min.,1975,13,68-74; LF,241.
YUGAWARALITE	$Ca(Al_2Si_6)O_{16}.4H_2O$	$Ca^{[8]}(H_2O)_4$ $\{3\infty\}[Si_6{}^{t}Al_2{}^{t}O_{16}]$ (Zeolite)	Mon. Pc	a=6.700Å β=111.07° b=13.972Å Z=2 c=10.039Å	Ca(2a) $Al_{I\text{-}II}$(2a) $Si_{I\text{-}VI}$(2a) $O_{I\text{-}XVI}$(2a)...		Zeit.Krist.,1986,174,265-281; Pov.,357;Str.Tab.,492;RRW, 683;SR,34A,374.
ZAHERITE	$Al_{12}(SO_4)_5(OH)_{26}.20H_2O$		Tric. P $\bar{1}$?	a=18.475Å α=95°14.4' b=19.454Å β=91°28.8' c=3.771Å γ=80°14.4' Z=1			Min.Mag.,1985,49,145-146; Hölzel,135;Am.Min.,1977,62, 1125-1128;Am.Min.,1986,71, 231-232(Abs.).
ZEMANNITE	$(H,Na)_2(Zn,Fe)_2(TeO_3)_3.nH_2O$	$(H,Na)_2(H_2O)_n\{3\infty\}$ $[(Zn,Fe)_2{}^{o}Te_3{}^{[4y]}O_9]$ (≈Zeolite)	Hex. $P6_3/m$	a=9.404Å c=7.636Å Z=2	(Zn,Fe)(4f) Tl(6h) O_I(6h)...		Eur.J.Min.,1995,7,509-523; Pov.,565;Str.Tab.,229;RRW, 685;Hölzel,93.
ZINCROSELITE	$Ca_2Zn(AsO_4)_2.2H_2O$		Mon. $P2_1/c$	a=5.832Å β=107.72° b=12.889Å Z=2 c=5.644Å			Am.Min.,1988,73,932(Abs.); Hölzel,163.

Table 214 $A_pB_qC_rD_sE_x.nAq.$

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ABERNATHYITE	$K(UO_2)AsO_4.3H_2O$	$(H_2O)_3K^{[6]}$ $\{2\infty\}[U^{[2+4]}O_2As^tO_4]$ (≈Metatorbernite)	Tet. P4/ncc	a=7.176Å Z=4 c=18.126Å	U(4c) As(4b) O_{I-II}(4c) O_{III-IV}(16g)		Am.Min.,1964,49,1578-1602; LF,246;SR,29,377-378Str.Tab.,353;Pov.,522.
AGARDITE-(La)	$(Cu,Ca)_6La(AsO_4)_3(OH)_6.3H_2O$		Hex. $P6_3/m$	?			Encyc.Miner.Nam.,11;Hölzel, 177.
AGARDITE-(Y)	$Cu_6(Y,Ca)(AsO_4)_3(OH)_6.3H_2O$		Hex. $P6_3/m$	a=13.583Å Z=2 c=5.895Å	Cu(12i)Y(2d) As(6h)O_{I-IV}(6h) O_{V-VI}(12i)		Acta Cryst.,1985,C41,161-163; Hölzel,177;RRW,5;Pov.,519.
AHEYLITE	$(Fe,Zn)Al_6(PO_4)_4(OH)_8.4H_2O$		Tric. P $\bar{1}$	a=7.408Å α=110°56' b=9.891Å β=115°3' c=7.627Å γ=69°89' Z=1			Hölzel suppl..
ALDERMANITE	$(Mg,Ca)_5Al_{12}(PO_4)_8(OH)_{22}.32H_2O$		Orth. ?	a=15.00Å Z=2 b=8.330Å c=26.60Å			Min.Mag.,1981,44,59-62;Am. Min.,1981,66,1099(Abs.); Hölzel,172.
ALIETTITE	$Ca_{0.2}Mg_6(Si,Al)_8O_{20}(OH)_4.4H_2O$		?				Am.Min.,1972,57,598(Abs.); Am.Min.,1982,67,394-398.
ALUMINOCOPIAPITE	$(Al,Mg)Fe_4(SO_4)_6(OH,O)_2.20H_2O$		Tric. P $\bar{1}$	a=7.30Å α=91.5° b=18.80Å β=102.3° c=7.31Å γ=98.7° Z=1			Can.Min.,1985,23,53-56; Hölzel,133;RRW,15;Pov.,601; Str.Tab.,295;Am.Min.,1967,52, 1220-1223.
ALUMINOPHAR-+MACOSIDERITE	$KAl_4(AsO_4)_3(OH)_4.6.5H_2O$	$Al_4^oAs_3^t[O_{12}(OH)_4(H_2O)_{6.5}K]$	Cub. P $\bar{4}3m$	a=7.745Å Z=1?			Am.Min.,1981,66,1099(Abs.); Hölzel,173;Str.Tab.,348;SR,11, 405-407.
AMICITE	$K_2Na_2(Al_4Si_4)O_{16}.5H_2O$	$K_2^{[7]}Na_2^{[6]}(H_2O)_5$ $\{3\infty\}[Al_4^tSi_4^tO_{16}]$ (Zeolite)	Mon. I 2	a=10.226Å β=88°19' b=10.422Å Z=2 c=9.884Å	Si_{I-II}(4c)Al_{I-II}(4c) O_{I-VIII}(4c)Na(4c) K(4c)...		Acta Cryst.,1979,B35,2866-2869;SR,45,367;Am.Min., 1980,65,808(Abs.);Hölzel,244.
AMSTALLITE	$CaAl(Si,Al)_4O_8(OH)_4.(H_2O,Cl)$		Mon. C2/c	a=18.830Å β=100.86° b=11.517Å Z=4 c=5.190Å			Am.Min.,1988,73,1492(Abs.); Hölzel,224.
ARISTARAINITE	$Na_2Mg(B_6O_8(OH)_4)_2.4H_2O$	$Na_2^{[5y]}Mg^o(H_2O)_4$ $\{2\infty\}[B_3^tB_3^{tr}O_8(OH)_4]$	Mon. $P2_1/a$	a=18.886Å β=97.72° b=7.521Å Z=2 c=7.815Å	Mg(2a) Na(4e) B_{I-VI}(4e) O_{I-XIV}(4e)...		Am.Min.,1977,62,979-989;Am. Min.,1974,59,647-651;SR,43A, 225-226; Hölzel,118.
ARMENITE	$BaCa_2Al_6Si_9O_{30}.2H_2O$	$3\infty[Ca_2^oAl_6^tSi_9^tO_{30}$ $(H_2O)_2Ba^{[12]}]$ (≈Milarite)	(Orth.) Pnna	a=13.874Å Z=4 b=18.660Å c=10.697Å	Ba(4c)Ca(8e) Al(4c) $(Si,Al)_{I-II}$(4d) ...		Am.Min.,1992,77,422-430;SR, 40A,286-287;Sov.Phys.Cryst., 1974,19,460-462;Pov.380;
ARSENIOSIDERITE	$Ca_2Fe_3O_2(AsO_4)_3.3H_2O$	$Ca_2^{[7]}(H_2O)_3$ $\{2\infty\}[Fe_3^oAs_3^tO_{12}]$ (=Mitridatite)	Mon. A2/a	a=17.76Å β=96.0° b=19.53Å Z=8 c=11.30Å			Am.Min.,1974,59,48-59;RRW, 35-36;Pov.,525;Str.Tab.,345; Hölzel,175;Encyc.Miner.Nam., 23.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ARTHURITE	$CuFe_2(AsO_4)_2(OH)_2.4H_2O$	$Cu^{o}Fe_2^{o}As_2^{t}[O_8(OH)_2(H_2O)_4]^{c/h}$ (Subs.d.Whitmorite)	Mon. $P2_1/c$	a=10.189Å β=92.16° b=9.649Å Z=2 c=5.598Å			SR,44A,349;Min.Mag.,1964, 33,937-941;Pov.,517;Str.Tab., 345; Hölzel,170.
AUBERTITE	$CuAl(SO_4)_2Cl.14H_2O$	$Cu^{o}Al^{o}S_2^{t}[O_8(H_2O)_{14}Cl]$	Tric. $P\bar{1}$	a=6.282Å α=91.85° b=13.192Å β=94.70° c=6.260Å γ=82.46° Z=1	Cu(1e)Cl(1g) Al(1f)S(2i) O_{I-XI}(2i)...		Acta Cryst.,1979,B35,2499-2502;Min.Abs.,80-2891; Hölzel,133.
AUTUNITE	$Ca(UO_2)_2(PO_4)_2.10H_2O$	$(H_2O)_{10}[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$	Tet. $I4/mmm$	a=6.989Å Z=2 c=20.63Å	Ca(2a)P(4d) U(4e)...	$(H_2O)_{10}[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]]$ AUTUNITE	LF,245; Wyckoff,1965,vol.3, 869-870;Am.Min.,1961,46,812-822;RRW,43;Pov.,555-556.
BARBERTONITE	$Mg_6Cr_2CO_3(OH)_{16}.4H_2O$		Hex. $P6_3/mmc$	a=6.18Å Z=1 b=15.55Å			Pov.,331;Str.Tab.,247;RRW, 49-50; Hölzel,107.
BASSETITE	$Fe(UO_2)_2(PO_4)_2.8H_2O$	$(H_2O)_8[Fe^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ (≈Metatorbernite)	Mon. $P2_1/m$	a=6.98Å β=90°32' b=17.07Å Z=1 c=7.01Å			Enc.Min.Nam.,33;Min.Mag., 1954,C25,343-353;Pov.,556; Str.Tab.,351;RRW,54;Hölzel, 181;LF,246.
BAYLDONITE	$(Cu,Zn)_3Pb(AsO_4)_2(OH)_2.H_2O$	$(H_2O)\{2\infty\}[(Cu,Zn)_3Pb^{[8ap]}(As^{t}O_4)_2(OH)_2]$	Mon. $C2/c$	a=10.147Å β=106°05' b=5.892Å Z=4 c=14.081Å	Cu_I(4a)Cu_{II}(4b) Cu_{III}(4d)Pb(4e) As(8f)...		Acta Cryst.,1979,B35,819-823; Am.Min.,1981,66,148-153;SR, 45A,324;Pov.,513;Str.Tab.,325
BAYLEYITE	$Mg_2(UO_2)(CO_3)_3.18H_2O$	$(H_2O)_{18}\{3\infty\}[Mg_2^{o}UO_2(CO_3)_3]$ (≈Liebijite)	Mon. $P2_1/a$	a=26.560Å β=92.90° b=15.256Å Z=4 c=6.505Å			Min.Abs.,87M/0308;Min.Abs., 87M/2144;Str.Tab.,249;RRW, 56;Hölzel,109.
BAZHENOVITE	$Ca_8S_5(S_2O_3)(OH)_2.20H_2O$		Mon. $P2_1/c$	a=8.45Å β=119.5° b=17.47Å Z=1 c=8.24Å			Am.Min.,1989,74,500(Abs.); Hölzel,26.
BECQUERELITE	$Ca(UO_2)_6O_4(OH)_6.8H_2O$	$(H_2O)_8Ca^{[5]}\{2\infty\}[(UO_2)_6O_4(OH)_6]$ (≈Billietite)	Orth. $Pn2_1a$	a=13.8378Å Z=4 b=12.3781Å c=14.9238Å	U_{I-VI}(4a) Ca(4a)...		Am.Min.,1987,72,1230-1238; Am.Min.,1984,69,214(Abs.); Pov.,327;Str.Tab.,225;RRW, 57.
BEIDELLITE	$(Na,Ca)_{0.3}Al_2(Si,Al)_4O_{10}(OH)_2.nH_2O$	$(H_2O)_n(Na,Ca)_{0.3}Al_2^{o}(OH)_2\{2\infty\}[(Si,Al)_4^{t}O_{10}]^{(2.s)c}$	Orth. $C2/m$	a=5.17Å β≈90°' b=8.94Å Z=2 c=15.2Å		$(H_2O)_n(Na,Ca)_{0.3}(Al,Mg)_2^{o}(OH)_2\{2\infty\}[Si_4^{t}O_{10}]^{(2.s)c}$ MONTMORILLONITE	Pov.,728,445;Str.Tab.,445;LF, 232;Encyc.Miner.Nam.,34; RRW,59.
BENTORITE	$Ca_6(Cr,Al)_2(SO_4)_3(OH)_{12}.26H_2O$		Hex. $P6_3/mmc$	a=22.35Å Z=8 c=21.41Å			Am.Min.1981,66,637(Abs.); Hölzel,136;Encyc.Miner.Nam., 36.
BERAUNITE	$Fe^{2+}Fe_5^{3+}(PO_4)_4(OH)_5.6H_2O$	$Fe_6^{o}P_4^{t}[O_{16}(OH)_5(H_2O)_6]$ (≈Strunzite)	Mon. $C2/c$	a=20.760Å β=93.55° b=5.154Å Z=4 c=19.248Å	Fe_I(4a)Fe_{II}(4c) Fe_{III-IV}(8f) P_{I-II}(8f)...		Can.Min.,1989,27,441-446; Pov.,548-549;Str.Tab.,343; Acta Cryst.,1967,22,173-181.

Table 216

$A_pB_qC_rD_sE_x.nAq.$ (cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
BILLIETITE	$Ba(UO_2)_6O_4(OH)_6.4H_2O$	$(H_2O)_4Ba\{2\infty\}[(UO_2)_6O_4(OH)_6]$ (≈Becquerelite)	Orth. $Pbn2_1$	a=12.0720Å Z=4 b=30.167Å c=7.1455Å	$U_{I\text{-}VI}$(4a)Ba(4a) $O_{I\text{-}XXVI}$(4a)...		Am.Min.,1987,72,1230-1238; Pov.,327;Str.Tab.225;RRW,70.
BOTRYOGEN	$MgFe(SO_4)_2(OH).7H_2O$	$Mg^{o}Fe^{o}S_2^{t}[O_8(OH)(H_2O)_7]$ (≈Copiapite)	Mon. $P2_1/n$	a=10.526Å β=100.13° b=17.872Å Z=4 c=7.136Å	Fe_I(2a)Fe_{II}(2c) Mg(4e)$Si_{I\text{-}II}$(4e) $O_{I\text{-}VIII}$(4e)...		Acta Cryst.,1958,B24,700-767; SR,32A,338;SR,33A,379-381; Pov.,601;Str.Tab.,295.
BRUGNATELLITE	$Mg_6FeCO_3(OH)_{13}.4H_2O$	$(H_2O)_4C^{IV}O_3\{2\infty\}[Mg_6^{o}Fe^{o}(OH)_{13}]$	Hex. $P\bar{3}$...	a=5.47Å Z=1 c=15.97Å			RRW,92;Pov,331;Str.Tab.,247; Hölzel,107;Am.Min.,1941,26, 295-315.
BULFONTEINITE	$Ca_2SiO_3(OH)F.H_2O$	$(H_2O)\{2\infty\}[Ca_2^{[7]}Si^{t}O_3(OH)F]$ (≈Connelite)	Tric. $P\bar{1}$	a=10.992Å α=93°57' b=8.185Å β=91°19' c=5.671Å γ=89°51' Z=4	$Ca_{I\text{-}IV}$(2i)$Si_{I\text{-}II}$(2i) $O_{I\text{-}VII}$(2i)		Acta Cryst.,1963,16,551-558; RRW,94;Pov.,422;Str.Tab.,379 ;SR,28,256-257.
BUTTGENBACHITE	$Cu_{18}(NO_3)_2(OH)_{32}Cl_3.H_2O$		Hex. $P6_3/mmc$	a=15.750Å Z=2 c=9.161Å	Cu_I(6g)Cu_{II}(12i) Cl(6h)Cu_{III}(6h) Cu_{IV}(12j) Cu_V(2a)...		Min.Mag.,1973,39,264-270; Pov.,650;SR,278;Str.Tab.,165; RRW,96.
CALCIOCOPIAPITE	$CaFe_4(SO_4)_6(OH)_2.20H_2O$		Tric. $P\bar{1}$	a=7.35Å α=85°31' b=18.21Å β=103°33' c=7.10Å γ=100°37' Z=1			Hölzel,suppl;Pov.,601;Str.Tab., 295;Can.Min.,1985,23,53-56; Am.Min.,1962,47,807-808; RRW,100.
CALLAGHANITE	$Cu_2Mg_2CO_3(OH)_6.2H_2O$		Mon. C2/c	a=10.06Å β=107°18' b=11.80Å Z=4 c=8.24Å	Cu(8f)Mg(8f) O_{II}(4e)(H_2O)(8f) C(4e)O_I(8f) $(OH)_{I\text{-}III}$(8f)		Acta Cryst.,1958,11,169-174; RRW,103;Pov.,620-621;Str. Tab.,247;SR,22,390-392.
CAMINITE	$MgSO_4.xMg(OH)_2.yH_2O$	$Mg^{o}Mg_x^{o}S^{t}[O_4(OH)_2(H_2O)_y]$	Tet. $I4_1/amd$	a=5.239Å Z=1? c=12.988Å			Am.Min.,1986,71,819-825; Hölzel,132.
CAMPIGLIAITE	$Cu_4Mn(SO_4)_2(OH)_6.4H_2O$	$Cu_4^{o}Mn^{o}S_2^{t}[O_8(OH)_6(H_2O)_4]$ (≈Devilline)	Mon. C2	a=21.707Å β=100.3° b=6.098Å Z=4 c=11.245Å	$Cu_{I\text{-}IV}$(4c)Mn(4c) $Si_{I\text{-}II}$(4c) $O_{I\text{-}XVIII}$(4c)...		Am.Min.,1982,67,385-393; Hölzel,132.
CARBONATE--CYANOTRICHITE	$Cu_4Al_2CO_3(OH)_{12}.2H_2O$		Orth.? ?	?			Am.Min.,1964,49,441-442 (Abs.);RRW,107;Pov.,332; Str.Tab.,295; Hölzel, 134.
CARNOTITE	$K_2(UO_2)_2(VO_4)_2.3H_2O$	$K_2^{[11]}(H_2O)_3\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$	Mon. $P2_1/a$	a=10.47Å β=103°50' b=8.41Å Z=2 c=6.59Å	K(4e)U(4e) V(4e)$O_{I\text{-}VI}$(4e)	$K_2^{[11]}(H_2O)_3\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$ CARNOTITE	Am.Min.,1965,50,825-842;SR, 30A,348349;LF,247;RRW, 109;Pov.,503,167;Str.Tab.,356
CASSEDANNEITE	$Pb_5(VO_4)_2(CrO_4)_2.H_2O$		Mon. A2/m...	a=7.693Å β=115.93° b=5.763Å Z=1 c=9.795Å			Am.Min.,1988,73,1493(Abs.); Hölzel,139.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
CAVANSITE	$Ca(VO)Si_4O_{10}.4H_2O$	$(H_2O)_4\{3\infty\}[Ca^{[7]}V^{[5y]}Si_4^tO_{11}]$	Orth. Pcmn	a=9.792Å Z=4 b=13.644Å c=9.629Å	Ca(4c)V(4c) $Si_{I-II}(8d)O_{I-V}(8d)$ $O_{VI}(4c)$...		Am.Min.,1973,58,412-424; Pov.,437;Str.Tab.,468;RRW, 112-113;SR,41A,379;Hölzel, 236.
CERULÉITE	$Cu_2Al_7(AsO_4)_4(OH)_{13}.12H_2O$		Tric. P $\bar{1}$?	a=14.359Å α=96.06° b=14.687Å β=93.19° c=7.440Å γ=91.63° Z=2			Am.Min.,1977,62,558-559 (Abs.);Pov.,517;Hölzel,172.
CHAIDAMUITE	$ZnFe(SO_4)_2(OH).4H_2O$		Mon. $P2_1/m$...	a=9.759Å β=106.2° b=7.134Å Z=2 c=7.335Å			Am.Min.,1988,73,1493(Abs.); Hölzel,133.
CHALCOALUMI-TE	$CuAl_4SO_4(OH)_{12}.3H_2O$		Mon. $P2_1$	a=17.090Å α=95°53' b=8.915Å Z=4 c=10.221Å			RRW,117;Hölzel,133;Str.Tab., 294.
CHALCOSIDERI-TE	$CuFe_6(PO_4)_4(OH)_8.4H_2O$		Tric. P $\bar{1}$	a=7.68Å α=67.5° b=7.90Å β=69.0° c=10.20Å γ=64.7° Z=1			Am.Min.,1965,50,227-231; Hölzel,172;RRW,120;Pov.,732; Str.Tab.,345.
CHAROITE	$(K,Na)_5(Ca,Ba,Sr)_8Si_{18}O_{46}(OH,F).nH_2O$		Mon. ?	a=10.7Å β=113° b=32.0Å Z=4 c=7.25Å			Am.Min.,1988,73,198(Abs.); Am.Min.,1978,63,1282(Abs.); Hölzel,221.
CHELKARITE	$CaMgB_2O_4Cl_2.7H_2O$?		Orth. Pbca	a=13.69Å Z=? b=20.84Å c=8.26Å			Am.Min.,1971,56,1122(Abs.); Hölzel,117.
CHENEVIXITE	$Cu_2Fe_2(AsO_4)_2(OH)_4.H_2O$		Mon. $P2_1/m$	a=15.006Å β=102°15' b=5.189Å Z=2 c=5.724Å			Min.Mag.,1977,41,27-32;Pov., 732,518;Str.Tab.,345;RRW, 122; Hölzel,172.
CHILDRENITE	$(Fe,Mn)AlPO_4(OH)_2.H_2O$	$(Fe,Mn)^oAl^oP^t[O_4(OH)_2(H_2O)]$ (=Eosphorite)	Orth. Bba2	a=10.395Å Z=8 b=13.394Å c=6.918Å			Min.Abs.,85M/0189;Pov.,534; Str.Tab.,344;RRW,124; Hölzel, 171.
CHRYSOCOLLA	$(Cu,Al)_2H_2Si_2O_5(OH)_4.nH_2O$		Orth. Cm?	a=5.7Å Z=? b=8.85Å c=6.7Å			Am.Min.,1969,54,993(Abs.); Hölzel,235;Pov.,732.
CLAIRITE	$(NH_4)_2(Fe,Mn)_3(SO_4)_4(OH)_3.3H_2O$		Tric. P $\bar{1}$?	a=9.368Å α=88.15° b=9.150Å β=90° c=52.610Å γ=118.36° Z=8			Am.Min.,1986,71,229(Abs.); Hölzel,136.
CLINOTYROLITE	$Ca_2Cu_9(AsO_4,SO_4)_4(OH,O)_{10}.10H_2O$		Mon. Pa...	a=10.513Å β=94°0' b=5.56Å Z=2 c=27.61Å			Min.Abs.,80-4909;Hölzel,174.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
COALINGITE	$Mg_{10}Fe_2CO_3(OH)_{24}.2H_2O$	$Mg_{10}{}^{o}Fe_2{}^{o}C^{tr}$ $[O_3(OH)_{24}(H_2O)_2]$ (≈Brucite)	Trig. R $\bar{3}$m	a=3.12Å Z=0.5 c=37.4Å	(Mg,Fe)(6c) O_I(6c)O_{II}(6c) ...		Min.Mag.,1971,38,286-294; Hölzel,107.
COERULEOLACTITE	$(Ca,Cu)Al_6(PO_4)_4(OH)_8.4\text{-}5H_2O$		Tric. ?	?			Am.Min.,1958,43,1224(Abs.); Hölzel,172;RRW,140;Str.Tab., 390.
COMBLAINITE	$Ni_6Co_2CO_3(OH)_{16}.4H_2O$		Trig. R $\bar{3}$m...	a=3.038Å a_R=7.796 Å c=22.79Å α=22.47° Z=3 Z_R=1			Am.Min.,1980,65,1065-1066 (Abs.); Hölzel,107.
CONNELITE	$Cu_{19}Cl_4SO_4(OH)_{32}.3H_2O$		Hex. P $\bar{6}$2c...	a=15.78Å Z=2 c=9.10Å	$Cu_{I\text{-}III}$(6g) $Cu_{IV\text{-}V}$(6h) Cu_{VI}(2a)$Cl_{I\text{-}II}$(6h) ...		Am.Min.,1972,57,426-438; Min.Mag.,1950,29,280-286; Pov.,650;Str.Tab.,165; RRW,144.
CREASEYITE	$Cu_2Pb_2(Fe,Al)_2Si_5S_{17}.6H_2O$		Orth. Cmmm?	a=12.483Å Z=4 b=21.395Å c=7.283Å			Min.Mag.,1975,40,227-231; Am.Min.,1976,61,503(Abs.); Hölzel,247;Encyc.Miner.Nam., 73.
CUALSTIBITE	$Cu_6Al_3(SbO_4)_3(OH)_{12}.10H_2O$		Hex. P3...	a=9.20Å Z=1 c=9.73Å			Am.Min.,1985,70,1329(Abs.); Hölzel,79.
CUPROCOPIAPITE	$CuFe_4(SO_4)_6(OH)_2.20H_2O$	$(H_2O)_6\{1\infty\}[Cu^{o}Fe_3{}^{o}S_6{}^{t}O_{24}(OH)_2(H_2O)_8]$ $\{g\}[Fe^{o}(H_2O)_6]$] (Subs.d.Copiapite)	Tric. P $\bar{1}$	a=7.31Å α=92.5° b=18.15Å β=102.3° c=7.25Å γ=100.4° Z=1			Can.Min.,1985,23,53-56;RRW, 156-157;Hölzel,133;Str.Tab., 295;Pov.,601.
CURIÉNITE	$Pb(UO_2)(VO_4)_2.5H_2O$	$Pb^{[8]}(H_2O)_5\{2\infty\}$ $[(UO_2)V_2O_8]$ (=Francevillite)	Orth. Pcan	a=10.40Å Z=4 b=8.45Å c=16.34Å	U(8d)V(8d) Pb(4c) $O_{I\text{-}VI}$(8d)...		Bull.Min.,1971,94,8-14;SR, 37A,239;Pov.,503;Str.Tab., 357;RRW,158.
CURITE	$Pb_{6.5}(UO_2)_{16}O_{16}(OH)_{12}(H_2O,OH)_4$		Orth. Pnam	a=12.58Å Z=1 b=13.01Å c=8.40Å	$U_{I\text{-}II}$(4c)U_{III}(8d) $Pb_{I\text{-}II}$(4c)...		SR,20,150-151;RRW,158-159; Hölzel,89;Str.Tab.,226;Pov., 327;Encyc.Miner.Nam.,76.
CYANOPHYLLITE	$Cu_5Al_2(SbO_4)_3(OH)_2.12H_2O$		Orth. Pmmb	a=11.82Å Z=2 b=10.80Å c=9.64Å			Am.Min.,1981,66,1274(Abs.); Hölzel,79.
CYANOTRICHITE	$Cu_4Al_2SO_4(OH)_{12}.2H_2O$		Orth. ?	a=10.16Å Z=1 b=12.61Å c=2.90Å			JCPDS,11-13;Hölzel,134;Min. Mag.,1961,32,737-738;RRW,160.
CYRILOVITE	$NaFe_3(PO_4)_2(OH)_4.2H_2O$		Tet. $P4_12_12$	a=7.313Å Z=4 b=19.315Å			Str.Tab.,347;Pov.,551;RRW, 160;Min.Abs.,88M/1837.
DARAPSKITE	$Na_3(SO_4)(NO_3).H_2O$	$Na_2{}^{o}Na^{[7]}(H_2O)$ $\{g\}[S^{t}O_4]\{g\}[N^{tr}O_3]$	Mon. $P2_1/m$	a=10.564Å β=102.78° b=6.911Å Z=2 c=5.194Å	Na_I(4f)Na_{II}(2e) S(2e)N(2e) O_I(4f)$O_{II\text{-}VII}$(2e)		SR,32A,332-333;Am.Min., 1970,55,1510-1517;Str.Tab., 234;Pov.,634;RRW,164.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
DELRIOITE	$SrCaV_2O_6(OH)_2 .3H_2O$		Mon. I2/a...	a=17.170Å β=102°29' b=7.081Å Z=8 c=14.644Å			Am.Min.,1970,55,185-200;Am. Min.,1959,44,261-264;Pov., 499-500;Str.Tab.,340;RRW, 168.
DESAUTELSITE	$Mg_6Mn_2CO_3(OH)_{16}.4H_2O$		Trig. R3m...	a=3.114Å Z=3/8 c=23.39Å			Am.Min.,1979,64,127-130; Hölzel,107.
DESPUJOLSITE	$Ca_3Mn(SO_4)_2(OH)_6.3H_2O$	$(H_2O)_3\{3\infty\}[Ca^{[10]}Mn^{[6]}S_2^tO_8(OH)_6]$ (=Schaurteite)	Hex. P $\bar{6}$2c	a=8.56Å Z=2 c=10.76Å	Ca(6h) Mn(2a) S(4f) O_I(4f) ...		Bull.Min.,1968,91,43-50;SR, 33A,381-382;Pov.,599;Str. Tab.,296-297;RRW,170.
DEVILLINE	$CaCu_4(SO_4)_2(OH)_6.3H_2O$	$Ca^{[7]}(H_2O)_3\{g\}[S^tO_4]_2\{2\infty\}[Cu_4^{[6]}(OH)_6]$	Mon. $P2_1/c$	a=20.870Å β=102°44' b=6.135Å Z=8 c=22.191Å			Acta Cryst.,1972,B28,1182-1189;Am.Min.,1969,54,328-329(Abs);SR,38A,339-340; Pov.,605.
DRESSERITE	$Ba_2Al_4(CO_3)_4(OH)_8.3H_2O$	$(H_2O)_3\{3\infty\}[Ba_2Al_4(OH)_8\{g\}[C^{tr}O_3]_4]$	Orth. Pbmm	a=9.27Å Z=2 b=16.83Å c=5.63Å			RRW,179;Pov.,621;Hölzel,108.
DUFRENITE	$Ca_{0.5}Fe_6(PO_4)_4(OH)_6.2H_2O$	$3\infty[Ca_{0.5}^{o}Fe_6^{o}P_4^tO_{16}(OH)_6(H_2O)_2]$	Mon. C2/c	a=25.84Å β=111.20° b=5.126Å Z=4 c=13.78Å	Ca(4e)Fe(4a) $O_{I\text{-}XII}$(8f)Fe_{II}(4c) $Fe_{III\text{-}IV}$(8f)$P_{I\text{-}II}$(8f)		Am.Min.,1970,55,135-169;SR, 35A,337-339;RRW,180;Pov., 543; Str.Tab.,319.
DUNDASITE	$PbAl_2(CO_3)_2(OH)_4.H_2O$	$(H_2O)\{3\infty\}[Pb^{[9]}Al_2^o(OH)_4\{g\}[C^{tr}O_3]_2]$	Orth. Pbnm	a=9.08Å Z=4 b=16.37Å c=5.62Å	Pb(4c)Al(8d) $C_{I\text{-}II}$(4c)$O_{I\text{-}VI}$(4c) $O_{VII\text{-}VIII}$(8d)		Min.Mag.,1972,38,564-569; Hölzel,170;SR,38A,300;Pov., 621;Str.Tab.,248;RRW,181.
EARLSHANNONITE	$(Mn,Fe)Fe_2(PO_4)_2(OH)_2.4H_2O$	$(Mn,Fe)^oFe_2^oP_2^t[O_8(OH)_2(H_2O)_4]^{c/h}$ (Subs.d.Whitmoreite)	Mon. $P2_1/c$	a=9.910Å β=93.95° b=9.669Å Z=2 c=5.455Å			Can.Min.,1984,22,471-474; Hölzel,170.
EGGLETONITE	$Na_2Mn_8(Si,Al)_{12}O_{29}(OH)_7.11H_2O$		Mon. I2/a ...	a=5.554Å β=93.95° b=13.72Å Z=2 c=25.00Å			Min.Mag.,1984,48,93-96; Hölzel,230.
EMBREYITE	$Pb_5(CrO_4)_2(PO_4)_2.H_2O$		Mon. $P2_1m$	a=9.755Å β=103°5' b=5.636Å Z=1 c=7.135Å			Min.Mag.,1972,38,790-793; RRW,189;Hölzel,139;K/B,179.
EOSPHORITE	$(Mn,Fe)AlPO_4(OH)_2.H_2O$	$(Mn,Fe)^oAl^oP^t[O_4(OH)_2(H_2O)]$ (=Childrenite)	Orth. Bbam	a=10.52Å Z=8 b=13.60Å c=6.97Å	(Mn,Fe)(8d) P(8f)Al(8c) O_I(8d)$O_{II\text{-}III}$(8f) $O_{IV\text{-}V}$(16g)		Acta Cryst.,1960,13,384-387; RRW,191-192;Pov.,534;Str. Tab.,344;K/B,125-126.
EPISTILBITE	$NaCa_3(Al_6Si_{18})O_{48}.16H_2O$	$Na^{[9]}Ca_3^{[9]}(H_2O)_{16}\{3\infty\}[Al_6^tSi_{18}^tO_{48}]$ (Zeolite)	Mon. C2/m	a=9.08Å β=124.54° b=17.74Å Z=1 c=10.25Å	(Ca,Na)(4i) $(Al,Si)_{I\text{-}III}$(8j) O_I(4i) $O_{II\text{-}III}$(4g)...		SR,32A,488-489;Zeit.Krist., 1985,173,257-265;Pov.,353-354;Eur.J.Min.,1996,8,263-271;RRW,193;Str.Tab.,490.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ETTRINGITE	$Ca_2Al_2(SO_4)_3$ $(OH)_{12}.26H_2O$	$Ca_6^{[8]}Al_2^{o}S_3^{t}$ $[O_{12}(OH)_{12}(H_2O)_{26}]$ (≈Thaumasite)	Trig. P31c	a=11.26Å Z=2 c=21.48Å	$Al_{I\text{-}II}$(2a)$Ca_{I\text{-}II}$(6c) $S_{I\text{-}III}$(2b) $O_{I\text{-}XVI}$(6c) $O_{XVII\text{-}XIX}$(2b)		Acta Cryst.,1970,B26,386-393;Am.Min.,1960,45,1137-1143;Pov.,600-601;Str.Tab., 297;SR,35A,378-379.
EZTLITE	$Pb_2Fe_6Te_4O_{15}$ $(OH)_{10}.8H_2O$		Mon. ?	a=6.58Å β=90°15' b=9.68Å Z=2 c=20.52Å			Hölzel,93;Min.Mag.,1982,46, 257-259.
FAHEYITE	$Be_2(Mn,Mg,Na)$ $Fe_2^{3+}(PO_4)_4.6H_2O$		Hex. $P6_422$?	a=9.43Å Z=3 c=16.00Å			Am.Min.,1964,49,395-398; Encyc.Miner.Nam.,94;Hölzel, 159;Pov.,553,Str.Tab.,330.
FAHLEITE	$CaZn_5Fe_2(AsO_4)_6$ $.14H_2O$		Orth. ?	a=6.60Å Z=2 b=11.6Å c=22Å			Am.Min.,1989,74,501-502 (Abs.); Hölzel,164.
FAUSTITE	$(Zn,Cu)Al_6(PO_4)_4.$ $(OH)_8.4H_2O$		Tric. ?	?			RRW,205-206;Hölzel,172; Pov.,535;Str.Tab.,344.
FEDORITE	$(K,Na)_{2.5}(Ca,Na)_7$ $Si_{16}O_{38}(OH,F)_2.H_2O$	$(K,Na)_{2.5}(Ca,Na)_7^{o}$ $(OH,F)_2(H_2O)$ $\{2\infty\}[Si_{16}O_{38}]$ (Calciotalc)	Tric. C $\bar{1}$	a=9.676Å α=93.35° b=16.706Å β=114.96° c=13.233Å γ=90.03° Z=2	(K,Na)(2i) $(Ca,Na)_{I\text{-}III}$(2i) $Si_{I\text{-}VIII}$(2i) ...		Sov.Phys.Cryst.,1983,28, 95-96;Hölzel,230.Pov.,737; Str.Tab.,468;RRW,206.
FERRICOPIAPITE	$(Fe,Al,Mg)Fe_5$ $(SO_4)_6(OH)_2.20H_2O$	$(H_2O)_6(Fe,Al,Mg)^{o}$ $\{1\infty\}[Fe_2^{o}S_3^{t}O_{12}(OH)$ $(H_2O)_4]_2$ $\{g\}[Fe^{o}(H_2O)_6]]$ (Inser.d.Copiapite)	Tric. P $\bar{1}$	a=7.390Å α=93°40' b=18.213Å β=102°3' c=7.290Å γ=99°16' Z=2	(Fe,Al,Mg)(2i) $Fe_{I\text{-}II}$(2i) $S_{I\text{-}III}$(2i) ...		Am.Min.,1973,58,314-322; Zeit.Krist.,1998,213,141-150; Hölzel,133;Can.Min.,1985,23, 53-56.
FLEISCHERITE	$Pb_3Ge(SO_4)_2(OH)_6.$ $.3H_2O$	$\{3\infty\}[Pb_3^{[9]}Ge^{o}S_2^{t}O_8$ $(OH)_6(H_2O)_3]$ (=Schaurteite)	Hex. P $\bar{6}2c$	a=8.867Å Z=2 c=10.875Å			SR,41A,345-346;Am.Min., 1960,45,1313(Abs.);Hölzel, 137;Encyc.Miner.Nam.,103.
FLUCKITE	$CaMn(AsO_3OH)_2.$ $.2H_2O$		Tric. P $\bar{1}$	a=8.459Å α=82.21° b=7.613Å β=98.25° c=6.98Å γ=95.86° Z=2			Am.Min.,1980,65,1066(Abs.); Hölzel,164;Bull.Min.,1980,103, 122-128.
FLUELLITE	$Al_2(PO_4)F_2(OH).$ $.7H_2O$	$Al_2^{o}P^{t}$ $[O_4F_2(OH)(H_2O)_7]$	Orth. Fddd	a=8.546Å Z=8 b=11.222Å c=21.158Å	Al(16c)P(8a) $O_{I\text{-}III}$(32h) F(16g)H(32h)		Am.Min.,1966,51,1579-1592; Hölzel,168;RRW,216-217;Str. Tab.,159;Pov.,549.
FLUORAPOPHY-LLITE	$KCa_4Si_8O_{20}(F,OH)$ $.8H_2O$	$Ca_4^{[7]}K^{[8]}(F,OH)$ $(H_2O)_8\{2\infty\}[Si_8^{t}O_{20}]^{s}$	Tet. P4/mnc	a=8.978Å Z=2 c=15.83Å	Ca(8h) K(2b) (F,OH)(2a)O_I(8g) $O_{II\text{-}IV}$(16i) ...	$Ca_4^{[7]}K^{[8]}(F,OH)$ $(H_2O)_8\{2\infty\}[Si_8^{t}O_{20}]^{s}$ HYDROAPOPHYLLITE	Am.Min.,1978,63,196-202; Am.Min.,1971,56,1222-1232; LF,242;Hölzel,226;LF,242.
FOGGITE	$CaAlPO_4(OH)_2.H_2O$	$\{3\infty\}[Ca^{[8]}Al^{o}P^{t}O_4$ $(OH)_2(H_2O)]$	Orth. $A2_122$	a=9.270Å Z=8 b=21.324Å c=5.190Å	Ca_I(4a)Ca_{II}(4b) $Al_{I\text{-}II}$(4b) P(8c) ...		Am.Min.,1975,60,965-971;SR, 41A,316-317;K/B,61;Hölzel, 176.

Table 221 $A_pB_qC_rD_sE_x.nAq.$ (cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
FOURMARIERITE	$PbO_3(UO_2)_4(OH)_4 .4H_2O$	$Pb^{[6+3]}(H_2O)_4$ $\{2\infty\}[U_4^{[2+5]}O_{11}(OH)_4]$	Orth. $Bb2_1m$	a=13.086Å Z=8 b=16.400Å c=14.293Å	$Pb_{I-II}(4a)$ $U_{I-IV}(8b)$...		Bull.Min.,1985,108,659-665; Am.Min.,1960,45,1026-1061; Hölzel,90;Pov.,327;Str.Tab., 225;RRW,220.
FRANCEVILLITE	$(Ba,Pb)(UO_2)_2$ $(VO_4)_2.5H_2O$	$(Ba,Pb)^{[8]}(H_2O)_5$ $\{2\infty\}[(UO_2)_2V_2O_8]$ (=Curiénite)	Orth. Pcan	a=10.41Å Z=4 b=8.51Å c=16.76Å			Pov.,503;Str.Tab.,357;RRW, 221;Hölzel,183.
FRANCOANELLITE	$H_6(K,Na)_3(Al,Fe)_5$ $(PO_4)_8.13H_2O$		Trig. R3c...	a=8.71Å Z=6 b=82.8Å			Am.Min.,1976,61,1054(Abs.); Hölzel,164;K/B,154.
FRANZINITE	$(Na,Ca)_7(Si,Al)_{12}$ $O_{24}(SO_4,OH)_3.H_2O$		Trig. P $\bar{3}$m1...	a=12.884Å Z=1? c=26.580Å			Am.Min.,1977,62,1259(Abs.); Hölzel,241.
FRITZSCHEITE	$Mn(UO_2)_2(VO_4)_2$ $.4H_2O$	$(H_2O)_4[Mn^{[6]}$ $\{2\infty\}[U^{[2+4]}O_2V^tO_4]_2]$ (≈Autunite)	Orth. Pnma	a=10.59Å Z=? b= 8.25Å c=15.54Å			Bull.Min.,1970,93,320-327; Hölzel, 129;RRW,223;LF,245; Pov.,556;Str.Tab.,352
GANOPHYLLITE	$(K,Na)_6(Mn,Al,Mg)_{24}$ $(Si,Al)_{40}O_{96}(OH)_{16}$ $.21H_2O$		Mon. A2/a	a=16.6Å β=94° b=26.6Å Z=8 c=50Å	(K,Na)(8f) $Mn_{I-II}(8f)$ $O_{I-X}(8f)$ ...		Min.Mag.,1986,50,307-315; Hölzel,230;RRW,229;Pov.,437; Str.Tab.,443.
GARRONITE	$NaCa_{2.5}(Al_6Si_{10})O_{32}$ $.13H_2O$	$NaCa_{2.5}(H_2O)_{13}$ $\{2\infty\}[Al_6^tSi_{10}^tO_{32}]$ (Zeolite)	Tet. $I4_1/amd$?	a=9.85Å Z=2 c=10.32Å			Gottardi and Galli,1985,122; Pov.,355;Str.Tab.,491;RRW, 230.
GATUMBAITE	$CaAl_2(PO_4)_2(OH)_2$ $.H_2O$		Mon. P2/m...	a=6.907Å β=91°3' b=5.095Å Z=2 c=10.764Å			Am.Min.,1978,63,793-794 (Abs.); Hölzel,176.
GEORGECHAOITE	$KNaZrSi_3O_9.2H_2O$	$K^oNa^oZr^o(H_2O)_2$ $\{1\infty\}[Si_3^tO_9]$ (≈Gaidonnayite)	Orth. $P2_1nb$	a=11.836Å Z=4 b=12.940Å c=6.735Å	K(4a)Na(4a) Zr(4a)$Si_{I-III}(4a)$ $O_{I-IX}(4a)$...		Can.Min.,1985,23,5-10,1-4; Hölzel,205.
GLAUCOCERINITE	$(Zn,Cu)_5Al_3(SO_4)_{1.5}$ $(OH)_{16}.9H_2O$		Trig. ?	a=3.057Å Z=? c=32.52Å			Min.Mag.,1985,49,583-590; RRW,238; Hölzel,133.
GOBBINSITE	$(Na,K)_4Ca(Al_6Si_{10})$ $O_{32}.12H_2O$	$(Na,K)_4Ca(H_2O)_{12}$ $\{3\infty\}[Al_6^tSi_{10}O_{32}]$ (Zeolite)	Orth. $Pmn2_1$	a=10.108Å Z=1 b=9.766Å c=10.171Å	Na(4b)$O_{I-VI}(4b)$ $O_{VII-X}(2a)$...		Zeit. Krist.,1985,171,281-289; Hölzel,244.
GORDONITE	$MgAl_2(PO_4)_2(OH)_2$ $.8H_2O$	$Mg^oAl_2^oP_2^t$ $[O_8(OH)_2(H_2O)_8]$ (≈Laueite)	Tric. P $\bar{1}$	a=5.24Å α=107°25' b=10.49Å β=111°4' c=6.96Å γ=72°22' Z=1			RRW,243;Pov.,560;Str.Tab., 342;Hölzel,170;K/B,153;Min. Abs.,89M/0263.
GORMANITE	$(Fe,Mg)_3Al_4(PO_4)_4$ $(OH)_6.2H_2O$		Tric. P1...	a=11.79Å α=90°50' b=5.11Å β=99°0' c=13.61Å γ=90°5' Z=2			Can.Min.,1981,19,381-387; Hölzel,171.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
GOUDEYITE	$Cu_6(Al,Y)(AsO_4)_3(OH)_6.3H_2O$		Hex. $P6_3/m$...	a=13.472Å Z=2 b=5.902Å			Am.Min.,1978,63,704-708; Hölzel,177.
GUILDITE	$CuFe(SO_4)_2(OH).4H_2O$	$Cu^oFe^oS_2^t[O_8(OH)(H_2O)_4]$	Mon. $P2_1/m$	a=9.786Å β=105°28' b=7.134Å Z=2 c=7.263Å	Fe(2a)Cu(2e) S_{I-II}(2e)...		Am.Min.,1978,63,478-483;Am. Min.,1970,55,502-505;SR,44A, 275;Pov.,601;Str.Tab.,295.
HAIWEEITE	$Ca(UO_2)_2Si_6O_{15}.5H_2O$	$(H_2O)_5\{3\infty\}[Ca(UO_2)_2Si_6^tO_{15}]$	Mon. P2/c	a=15.4Å β=107°52' b=7.05Å Z=2 c=7.10Å			Am.Min.,1959,44,839-843; Pov.,457;Str.Tab.,386;RRW, 255;Hölzel,196;Am.Min.,1981, 66,610-625.
HANNAYITE	$(NH_4)_2Mg_3(PO_3OH)_4.8H_2O$	$Mg_3^oP_4^t[(NH_4)_2O_{12}(OH)_4(H_2O)_8]$ (≈Struvite)	Tric. $P\bar{1}$	a=10.728Å α=97.87° b=7.670Å β=96.97° c=6.702Å γ=104.74° Z=1	Mg_I(1a)Mg_{II}(2i) P_{I-II}(2i)N(2i)...		Acta Cryst.,1976,B32,2842-2848;K/B,82-83;Pov.,548;Str. Tab.,338;SR,42A,338.
HARMOTOME	$Ba_2(Ca_{0.5},Na)(Si_{11}Al_5)O_{32}.12H_2O$	$Ba_2^{[12]}(Ca_{0.5},Na)^{[6]}(H_2O)_{12}\{3\infty\}[Si_{11}^tAl_5^tO_{32}]$ (Zeolite)	Mon. $P2_1/m$...	a=9.879Å β=124.20° b=14.139Å Z=1 c=8.693Å	Ba(2e)Ca(4f) (Si,Al)$_{I-VII}$(4f) ...	Deriv. $K^{[12]}(Ca_{0.5},Na)_2^{[6]}(H_2O)_6\{3\infty\}[Si_5^tAl_3^tO_{16}]$ PHILLIPSITE	Acta Cryst.,1974,B30,2426-2433;SR,40A,287;Pov.,353;LF, 296;Str.Tab.,491;RRW,259.
HEINRICHITE	$Ba(UO_2)_2(AsO_4)_2.10H_2O$	$Ba(H_2O)_{10}\{2\infty\}[U_2^oAs_2^tO_{12}]$ (≈Zeunerite)	Tet. I4/mmm...	a=7.13Å Z=2 c=20.56Å			Pov.,521;Str.Tab.,352;RRW, 265;Hölzel,179;Am.Min.,1958, 43,1134-1143.
HYDROBIOTITE	$K(Mg,Fe)_6(Si,Al)_8O_{20}.xH_2O$	$K^{[12]}(Mg,Fe)_6^o(H_2O)_x\{2\infty\}[(Si,Al)_8^tO_{20}]^{(2s)c}$	Orth. ?	a=? Z=? b=? c=24.51Å?			Hölzel,229;Encyc.Miner.Nam., 136;Am.Min.,1983,68,420-425;Pov.,445;RRW,287.
HYDROBORACITE	$CaMg(B_3O_4(OH)_3)_2.3H_2O$	$Ca^{[8]}Mg^{[6]}(H_2O)_3\{1\infty\}[B_2^tB^{tr}O_4(OH)_3]_2$	Mon. P2/c	a=11.769Å β=102.55° b=6.684Å Z=2 c=8.235Å	Mg(2a)Ca(2f) O_I(2e)O_{II-IX}(4g) B_{I-III}(4g)		SR,44A,232;SR,27,551-554; Pov.,481-482;SR,27,551-552; Str.Tab.,261;Can.Min.,1978, 16,75-80.
HYDROCHLORBORITE	$Ca_2B_4O_4(OH)_7Cl.7H_2O$	$[Cl(H_2O)_5]Ca_2(H_2O)_3\{1\infty\}[B_2^tB^{tr}(OH)_4]$	Mon. I2/a	a=22.783Å β=96.705° b=8.745Å Z=8 c=17.066Å	Ca_{I-II}(8f) B_{I-IV}(8f) O_{I-IV}(8f) ...		Am.Min.,1978,63,814-823;Am. Min.,1977,62,147-150;Pov., 491;Str.Tab.,264;Hölzel,119; SR,44A,232-233.
HYDRODRESSERITE	$BaAl_2(CO_3)_2(OH)_4.3H_2O$	$(H_2O)_3\{3\infty\}[Ba^{[9]}Al_2^O(OH)_4\{g\}[C^{tr}O_3]_2]$ (≈Dundasite)	Tric. $P\bar{1}$	a=9.7545Å α=95.69° b=10.4069Å β=92.27° c=5.6322Å γ=115.64° Z=2	Ba(2i) Al_I(1g) Al_{II}(1c) Al_{III}(1e) Al_{IV}(1h) C_{I-II}(2i)...		Can.Min.,1982,20,253-262; Am.Min.,1979,64,654-655; Hölzel,108;Encyc.Miner.Nam., 136.
HYDROHONESSITE	$Ni_6Fe_2SO_4(OH)_{16}.7H_2O$		Hex. ?	a=3.09Å Z=? c=10.80Å			Min.Mag.,1981,44,333-337; Min.Mag.,1981,44,339-343.
HYDROTALCITE	$Mg_4Al_2(OH)_{12}CO_3.3H_2O$		Trig. $R\bar{3}m$	a=3.054Å Z=1/2 c=22.81Å			SR,40A,306;RRW,291;Str.Tab. ,248;Pov.,742;Hölzel,107.
HYDROXYAPOPHYLLITE	$KCa_4Si_8O_{20}(OH,F).8H_2O$	$Ca_4^{[7]}K^{[8]}(OH,F)(H_2O)_8\{2\infty\}[Si_8^tO_{20}]^s$	Tet. P4/mnc	a=8.978Å Z=2 c=15.83Å	K(2b)Ca(8h) O_I(8g) O_{IIIV}(16i)...	$Ca_4^{[7]}K^{[8]}(OH,F)(H_2O)_8\{2\infty\}[Si_8^tO_{20}]^s$ HYDROXYAPOPHYLLITE	Am.Min.,1978,63,196-202;LF, 242;Hölzel,226.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ILMAJOKITE	$(Na,Ce,Ba)_{10}Ti_5Si_{14}O_{22}(OH)_{44}.nH_2O$		Mon. ?	a=23Å Z=9? b=24.4Å c=37Å			Am.Min.,1973,58,139-140 (Abs.);Hölzel,193.
INDERBORITE	$CaMg(B_3O_3(OH)_5)_2.6H_2O$	$(H_2O)_2\{2\infty\}[Ca^{[8]}Mg^{o}B_4{}^{t}B_2{}^{tr}O_6(OH)_{10}(H_2O)_4]$	Mon. C2/c	a=12.137Å β=90.29° b=7.433Å Z=4 c=19.234Å	Ca(4e)Mg(4a) B_{I-III}(8f)...		Can.Min.,1994,32,533-539; Acta Cryst.,1966,21,A61(Abs.); Pov.,476-477;Str.Tab.,257; RRW,300.
INDIGIRITE	$Mg_2Al_2(CO_3)_4(OH)_2.15H_2O$		? ?	a=? Z=? b=3.16Å c=6.23Å			Am.Min.,1972,57,326-327 (Abs.);Hölzel,108;Pov.,742; RRW,301.
INESITE	$Ca_2Mn_7Si_{10}O_{28}(OH)_2.5H_2O$	$(H_2O)_5\{3\infty\}[Ca_2{}^{[7y]}Mn_7{}^{o}Si_{10}{}^{t}O_{28}(OH)_2]$	Tric. P $\bar{1}$	a=8.889Å α=88.15° b=9.247Å β=132.07° c=11.975Å γ=96.64° Z=1	Ca(2i)Mn_{I-IV}(2i) Si_{I-V}(2i)...		Am.Min.,1978,63,563-571;Am. Min.,1968,53,1614-1634;RRW, 301;Pov.,419;Str.Tab.,426;SR, 309.
IOWAITE	$Mg_4FeOCl(OH)_8.2\text{-}4H_2O$		Trig. R $\bar{3}$m	a=3.1183Å c=24.113Å Z=3/4?	(Fe,Mg)(3a) O_I(36i)...		Min.Mag, 1994,58,79-85;RRW, 303;Pov.,324-325;Str.Tab., 215;Am.Min.,1967,52,1261-1271.
IRHTEMITE	$Ca_4MgH_2(AsO_4)_4.4H_2O$		Mon. ?	a=16.73Å β=97°15' b=9.48Å Z=4 c=10.84Å			Bull.Min.,1972,95,365-370;Am. Min.,1974,59,209(Abs.); Hölzel,164.
KAHLERITE	$Fe(UO_2)_2(AsO_4)_2.12H_2O$		Tet. $P4_2/n$	a=14.30Å Z=8 c=21.97Å			RRW,315;Pov.,522;Str.Tab., 351;Hölzel,179.
KAINITE	$KMg(SO_4)Cl.3H_2O$	$K^{[8/9]}Cl(H_2O)_3\{2\infty\}[Mg^{o}S^{t}O_4]$	Mon. C2/m	a=19.72Å β=94°55' b=16.23Å Z=16 c=9.53Å	K_{I-II}(4i)K_{III}(8j) S_{I-II}(8i)Mg_I(2d) Mg_{II}(2a)Mg_{III}(4f) Mg_{IV}(8j)...		Am.Min.,1972,57,1325-1332; LF,319;RRW,315-316;Pov., 600;Str.Tab.,296;SR,38A,332.
KAMBALDAITE	$NaNi_4(CO_3)_3(OH)_3.3H_2O$	$(H_2O)_3\{3\infty\}[Na^{[6]}Ni_4{}^{o}\{g\}[C^{tr}O_3]_3(OH)_3]$	Hex. $P6_3$	a=10.340Å Z=2 c=6.097Å	Na(2a)Ni_I(6c) Ni_{II}(2b)C(6c)...		Am.Min.,1985,70,423-427;Am. Min.,1985,70,419-422;Hölzel, 106.
KANEMITE	$HNaSi_2O_4(OH)_2.2H_2O$		Orth. Pnmb	a=7.282Å Z=4 b=20.507Å c=4.956Å			Bull.Min.,1972,95,371-382;Am. Min.,1974,59,210(Abs.).
KASOLITE	$Pb(UO_2)SiO_4.H_2O$	$Pb_2{}^{8]}(H_2O)_2\{2\infty\}[(U^{[7]}O_2)_2(Si^{t}O_4)_2]$ (≈Uranophane)	Mon. $P2_1/a$	a=13.28Å β=75°45' b=6.96Å Z=4 c=6.74Å	U(4e)Pb(4e) Si(4e)U_{I-II}(4e)		Sov.Phys. Cryst.,1965,9,621-622;SR,29,405-406;Pov.,456-457;Str.Tab.,386;RRW,319; LF,244.
KEHOEITE	$(Zn,Ca)Al_2(PO_4)_2(OH)_2.5H_2O$	$(Zn,Ca)(H_2O)_5\{3\infty\}[P_2{}^{t}Al_2{}^{t}O_8(OH)_2]$ (≈Analcime (cubic))	Cub. Ia $\bar{3}$d	a=13.7Å Z=4			Hölzel,170;Pov.,532;Str.Tab., 358;RRW,320;Min.Mag.,1964, 33,799-803;Can.Min.1974,12, 352-353.
KEYSTONEITE	$H_{0.8}Mg_{0.8}(Ni,Fe,Mn)_2(FeO_3)_3.5H_2O$		Hex. $P6_3/m$	a=9.344Å Z=1 c=7.607Å			Hölzel suppl..

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
KIDWELLITE	$NaFe_9(PO_4)_6(OH)_{10}.5H_2O$		Mon. A2/m...	a=20.61Å β=112.64° b=5.15Å Z=2 c=13.75Å			Min.Mag.,1978,42,137-140; Hölzel,173;K/B,157.
KITTATINNYITE	$Ca_2Mn_3Si_2O_8(OH)_4.9H_2O$		Hex. $P6_3/mmc$...	a=6.498Å Z=2 c=22.78Å			Am.Min.,1983,68,1029-1032; Hölzel,187.
KLEEMANITE	$ZnAl_2(PO_4)_2(OH)_2.3H_2O$		Mon. P2...	a=7.290Å β=110.20° b=7.194Å Z=2 c=9.762Å			Min.Mag.,1979,43,93-95;K/B, 160;Hölzel,170.
KOLFANITE	$Ca_2Fe_3O_2(AsO_4)_3.2H_2O$		Mon. ?	a=17.86Å β=96° b=19.66Å Z=12 c=11.11Å			Am.Min.,1983,68,280(Abs.); Hölzel,175.
KOMAROVITE	$(Ca,Mn)Nb_2(Si_2O_7)(O,F)_3.3.5H_2O$		Orth. ?	a=21.30Å Z=18 b=14.00Å c=17.19Å			Am.Min.,1972,57,1315-1316 (Abs.);Hölzel,201;Pov.,744,368 RRW,330.
LABUNTSOVITE	$(K,Na)_8(Ti,Nb)_9(SiO_3)_{16}(O,OH)_{10}.xH_2O$	$(Ti,Nb)_9{}^{o}Si_{16}{}^{t}[O_{48}(O,OH)_{10}(H_2O)_x(K,Na)_8]$	Mon. I2/m	a=14.18Å γ=117° b=15.48Å Z=2 c=13.70Å	$Ti_I(2a)Ti_{II}(4g)$ $Ti_{III}(4i)Si_{I-II}(8j)$...		Sov.Phys.Cryst.,1974,18,596-599;Hölzel,201;RRW,338;Str. Tab.,393;SR,39A,345;Pov.,745
LANDESITE	$(Mn,Mg)_9Fe_3(PO_4)_8(OH)_3.9H_2O$	$(Mn,Mg)_9{}^{o}Fe_3{}^{o}P_8{}^{t}[O_{32}(OH)_3(H_2O)_9]$	Orth. Pbna	a=9.458Å Z=4? b=10.185Å c=8.543Å	P(8d) $(Mn,Mg)_I(4a)$ $(Mn,Mg)_{II}(8d)$...		Min.Mag.,1980,43,789-795; RRW,340;Am.Min.,1964,49, 1122-1125;Pov.,745,547;SR, 46A,326.
LAUEITE	$MnFe_2(PO_4)_2(OH)_2.8H_2O$	$Mn^{o}Fe_2{}^{o}P_2{}^{t}[O_8(OH)_2(H_2O)_8]$ (≈Strunzite)	Tric. P $\bar{1}$	a=5.28Å α=107°55' b=10.66Å β=110°59' c=7.14Å γ=71°7' Z=1	$Mn(1a)Fe_I(1c)$ $Fe_{II}(1g)P(2i)$...		Am.Min.,1965,50,1884-1892; Am.Min.,1969,54,1312-1323; K/B,67-68;RRW,344;Pov.,560-561;SR,30A,395-396.
LAWSONBAUERITE	$(Mn,Mg)_9Zn_4(SO_4)_2(OH)_{22}.8H_2O$	$(Mn,Mg)_9{}^{o}Zn_4{}^{t}S_2{}^{t}[O_8(OH)_{22}(H_2O)_8]$ (=Torreyite)	Mon. $P2_1/c$	a=10.50Å β=95.21° b=9.64Å Z=2 c=16.41Å	$(Mn,Mg)_I(2a)$ $(Mn,Mg)_{II-V}(4e)$ $Zn_{I-II}(4e)S(4e)$...		Am.Min.,1982,67,1029-1034; Am.Min.,1979,64,949-952; Hölzel,132.
LAWSONITE	$CaAl_2Si_2O_7(OH)_2.H_2O$	$Ca^{[8]}(H_2O)\{3\infty\}[Al_2{}^{o}(OH)_2\{g\}[Si_2{}^{t}O_7]]$	Orth. Ccmm	a=8.795Å Z=4 b=5.847Å c=13.142Å	Ca(4c)Al(8d) Si(8f)O_I(4c) O_{II}(16h) O_{III-IV}(8f)O_V(4c)..		Am.Min.,1978,63,311-315, RRW,348;Pov.,403;Str.Tab., 390;SR,44A,310-311;Hölzel, 199.
LEHNERITE	$Mn(UO_2)_2(PO_4)_2.8H_2O$		Mon. $P2_1/n$	a=7.04Å β=90°18' b=17.16Å Z=2 c=6.95Å			Min.Abs.,89M/0934; Hölzel, 181;K/B,190,83-84.
LEIGHTONITE	$K_2Ca_2Cu(SO_4)_4.2H_2O$		Orth. Fmmm	a=11.67Å Z=4 b=16.52Å c=7.49Å			RRW,351;Pov.,594;Str.Tab., 290;Hölzel,131;Can.Min.,1962, 7,272-277.
LEMOYNITE	$(Na,K)_2CaZr_2Si_{10}O_{26}.5\text{-}6H_2O$	$(Na,K)_2{}^{[5/7]}Ca^{[6]}(H_2O)_{5\text{-}6}\{3\infty\}[Zr_2{}^{o}Si_{10}{}^{t}O_{26}]$	Mon. C2/c	a=10.384Å β=104.59° b=15.947Å Z=4 c=18.601Å			SR,42A,406-407;RRW,351; Pov.,369;Str.Tab.,428.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
LEUCOPHOSPHITE	$K(Fe,Al)_2(PO_4)_2(OH).2H_2O$	$K^{[6]}(H_2O)\{3\infty\}[(Fe,Al)_2{}^{o}(P^{t}O_4)_2(OH)(H_2O)]$ (=Tinsleyite)	Mon. $P2_1/n$	a=9.782Å β=102.24° b=9.658Å Z=4 c=9.751Å	$K(4e)Fe_{I-II}(4e)$ $P_{I-II}(4e)O_{I-XI}(4e)$		Am.Min.,1972,57,397-410;SR, 38A,314-315;Pov.,551;Str. Tab.,348;RRW,355;Hölzel,173.
LEVYNE	$NaCa_{2.5}(Al_6Si_{12})O_{36}.18H_2O$	$NaCa_{2.5}(H_2O)_{18}\{3\infty\}[Si_{12}{}^{t}Al_6{}^{t}O_{36}]$ (Zeolite)	Trig. R 3m	a=13.338Å a_R=10.87Å c=23.014Å α=75°42' Z=9 Z_R=3	$(Ca,Na)_{I-IV}(6c)$ $(Ca,Na)_V(3b)$...		Sr,41A,386;LF,288;RRW,355; SR,23,491-492; Pov.,351;Str. Tab.,492;LF,288.
LIEBIGITE	$Ca_2(UO_2)(CO_3)_3.11H_2O$	$Ca_2{}^{[8]}(H_2O)_{11}\{2\infty\}[UO_2\{g\}[C^{tr}O_3]_3]$	Orth. Bba2	a=16.699Å Z=8 b=17.557Å c=13.697Å			Min.Abs.,84M/3848;Pov.,625; Str.Tab.,249;RRW,356.
LIOTTITE	$(Ca,Na)_8(Si,Al)_{12}O_{24}(SO_4,Cl,OH)_4.2H_2O$	$(Ca,Na)_8(H_2O)_2(SO_4,Cl,OH)_4\{3\infty\}[(Si,Al)_{12}{}^{t}O_{24}]$ (≈Cancrinite)	Hex. P6	a=12.870Å Z=? c=16.096Å	$Ca_I(1d)Ca_{II}(2h)$ $Ca_{III}(2g)$ $Ca_{IV-V}(2i)$...		Can.Min.,1996,34,1021-1030; Am.Min.,1977,62,321-326; Hölzel,240.
LIROCONITE	$Cu_2AlAsO_4(OH)_4.4H_2O$	$Cu_2{}^{o}Al^{o}As^{t}[O_4(OH)_4(H_2O)_4]$	Mon. I2/a	a=12.64Å β=91°18' b=7.50Å Z=4 c=9.86Å	Cu(8f)Al(4a) As(4e)...		Sov.Phys.Cryst.,1968,13,324-328;RRW,359;Pov.,517;Str. Tab.,346;Hölzel,172.
LOVDARITE	$K_2Na_6Be_4Si_{14}O_{36}.9H_2O$	$K_2Na_6(H_2O)_9\{3\infty\}[Si_{14}{}^{t}Be_4{}^{t}O_{36}]$	Orth. $P2_12_12$	a=38.789Å Z=2? b=6.776Å c=7.012Å			Am.Min.,1974,59,874(Abs.); Acta Cryst.,1981,A37,C189 (Abs.);Am.Min.,1983,68,474 (Abs.).
LUETHEITE	$Cu_2Al_2(AsO_4)_2(OH)_4.H_2O$		Mon. $P2_1/m$	a=14.743Å β=101°49' b=5.093Å Z=2 c=5.598Å			Min.Mag.,1977,41,27-32; Hölzel,172.
LÜNEBURGITE	$Mg_3(B(OH)_3)_2(PO_4)_2.5H_2O$	$(H_2O)_5\{2\infty\}[Mg_3{}^{o}B_2{}^{t}(OH)_6(P^{t}O_4)_2]$	Tric. P $\bar{1}$	a=6.3475Å α=84.46° b=9.8027Å β=106.40° c=6.2976Å γ=96.40° Z=1	$Mg_I(1a)Mg_{II}(2i)$ B(2I)P(2i)...		Am.Min.,1991,76,1400-1407; RRW,367;Pov.,475;Str.Tab., 256;Hölzel,114;Encyc.Miner. Nam.,179;Pov.,475.
MACDONALDITE	$BaCa_4Si_{16}O_{36}(OH)_2.10H_2O$	$Ba^{[10]}Ca_4{}^{[6]}(HO)_2(H_2O)_{10}\{2\infty\}[Si_{16}{}^{t}O_{36}]$ (≈Hydroxyapophyllite)	Orth. Cmcm	a=14.081Å Z=4 b=13.109Å c=23.560Å	$Ba(4c)Si_{I-IV}(16h)$ $Ca_I(8f)Ca_{II}(8d)$...		SR,33A,489-490;Am.Min., 1965,50,314-340;Pov.,434; Str.Tab.,468;RRW,369.
MAGNESIOAUBERTITE	$(Mg,Cu)Al(SO_4)_2Cl.14H_2O$	$(Mg,Cu)^{o}Al^{o}S_2{}^{t}[O_8(H_2O)_{14}Cl]$ (=Aubertite)	Tric. P $\bar{1}$	a=6.31Å α=91.74° b=13.20Å β=94.55° c=6.29Å γ=82.67° Z=1			Min.Abs.,89M/0935.
MAGNESIOCOPIAPITE	$MgFe_4(SO_4)_6(OH)_2.20H_2O$	$(H_2O)_6\{1\infty\}[Mg^{o}Fe_3{}^{o}S_6{}^{t}O_{24}(OH)_2(H_2O)_8]\{g\}[Fe^{o}(H_2O)_6]$] (Subs.d.Copiapite)	Tric. P $\bar{1}$	a=7.342Å α=91.45° b=18.818Å β=102.15° c=7.389Å γ=98.85° Z=1	$Mg(1a)Fe_{I-II}(2i)$ $S_{I-III}(2i)$ $O_{I-XXIII}(2i)$		Zeit.Krist.,1972,135,34-35; Can.Min.,1985,23,53-56; Hölzel,132;Str.Tab.,295;RRW, 373.
MANASSEITE	$Mg_6Al_2CO_3(OH)_{16}.4H_2O$		Hex. $P6_3/mmc$	a=6.13Å Z=1 b=15.37Å			Pov.,331;Str.Tab.,247;RRW, 378;Hölzel,106.
MAPIMITE	$Zn_2Fe_3(AsO_4)_3(OH)_4.10H_2O$	$Zn_2{}^{o}Fe_3{}^{o}As_3{}^{t}[O_{12}(OH)_4(H_2O)_{10}]$	Mon. Cm	a=11.415Å β=107.74° b=11.259Å Z=2 c=8.661Å	$Zn_{I-II}(2a)Fe_I(2a)$ $Fe_{II}(4b)As_I(2a)$ $As_{II}(4b)$...		Acta Cryst.,1981,B37,1040-1043;Am.Min.,1982,67,623-624(Abs.);Hölzel,171.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MARGARITASITE	$(Cs,H_3O,K)_2(UO_2)_2(VO_4)_2.H_2O$	$(Cs,H_3O,K)_2^{[11]}(H_2O)\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$	Mon. $P2_1/a$	a=10.514Å β=106.01° b=8.425Å Z=2 c=7.252Å		$K_2^{[11]}(H_2O)\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$ CARNOTITE	Am.Min.,1982,67,1273-1289; Hölzel,183.
MATULAITE	$CaAl_{18}(PO_4)_{12}(OH)_{20}.28H_2O$		Mon. $P2_1/c$	a=20.4Å β=98.2° b=16.7Å Z=2 c=10.6Å			Am.Min.,1980,65,1067(Abs.); Hölzel,176.
MAZZITE	$K_2CaMg_2(Si,Al)_{36}O_{72}.28H_2O$	$K_2CaMg_2(H_2O)_{28}\{3\infty\}[(Si,Al)_{36}{}^tO_{72}]$ (≈Gmelinite,Zeolite)	Hex. $P6_3/mmc$...	a=18.392Å Z=? c=7.646Å			Am.Min,1975,60,340(Abs.); Min.Abs.,3276-3282;SR,41A, 388-389; Hölzel,244.
MBOBOMKULITE	$(Ni,Cu)Al_4(NO_3,SO_4)_2(OH)_{12}.3H_2O$		Mon. ?	a=10.171Å β=95.37° b=8.865Å Z=4 c=17.145Å			Am.Min.,1982,67,415-416; Hölzel,135.
MERLINOITE	$(K,Na)_5(Ba,Ca)_2(Si_{23}Al_9)O_{64}.24H_2O$	$(K,Na)_5(Ba,Ca)_2(H_2O)_{24}\{3\infty\}[(Si_{23}Al_9)O_{64}]$ (Zeolite)	Orth. Immm	a=14.116Å Z=1 b=14.229Å c=9.946Å			SR,45A,372;Am.Min.,1978,63, 598; Hölzel,244.
MESOLITE	$Na_2Ca_2(Al_6Si_9)O_{30}.8H_2O$	$Na_2^{[6]}Ca_2^{[7]}(H_2O)_8\{3\infty\}[Al_6{}^tSi_9{}^tO_{30}]$ (≈Natrolite,Zeolite)	Orth. Fdd2	a=18.4049Å Z=8 b=56.655Å c=6.5443Å	Na(16b)Ca(16b) Al_{I-III}(16b)Si_I(8a) Si_{II-V}(16b)...		Acta Cryst.,1986,C42,937-942; Pov.,356;Str.Tab.,487; Hölzel, 243.
META--ANKOLEITE	$K_2(UO_2)_2(PO_4)_2.6H_2O$	$(H_2O)_6[K_2^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2$	Tet. P4/nmm	a=6.993Å Z=1 c=8.891Å		$(H_2O)_6[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ META-AUTUNITE	Am.Min.,1967,52,560(Abs.); Pov.,556;Str.Tab.,395;Hölzel, 180;K/B,162LF;246.
META-AUTUNITE	$Ca(UO_2)_2(PO_4)_2.6H_2O$	$(H_2O)_6[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$	Tet. P4/nmm	a=6.980Å Z=1 c=8.420Å	U(2c)O_I(2a) Ca(2c)O_{I-II}(2c) O_{III}(8i) P(2a)...	$(H_2O)_6[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ META-AUTUNITE	LF,246;Wyckoff,1965,3,869-871;SR,24,412-413;Pov.,556; Str.Tab.,352;RRW,395.
METAHEINRICHITE	$Ba(UO_2)_2(AsO_4)_2.8H_2O$	$(H_2O)_8[Ba\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$	Tet. $P4_2$...	a=7.07Å Z=2 c=17.74Å			Am.Min.,1958,43,1134-1143; Pov.,522;Str.Tab.,353;RRW, 397;Hölzel,180.
METAKAHLERITE	$Fe(UO_2)_2(AsO_4)_2.8H_2O$		Tet. ?	a=20.25Å Z=16 c=17.20Å			Am.Min.,1986,71,1037-1044; Str.Tab.,353;RRW,398; Hölzel, 179.
METAKIRCHHEIMERITE	$Co(UO_2)_2(AsO_4)_2.8H_2O$		Tet. I4/mmm	a=14.29Å Z=4 c=21.92Å			Pov.,522;Str.Tab.,353;RRW, 398;Hölzel,180;Bull.Min.,1958, 81,67-68(Abs.);Am.Min.,1959, 44,466
METALODEVITE	$Zn(UO_2)_2(AsO_4)_2.10H_2O$		Tet. $P4_2/m$	a=7.16Å Z=? c=17.20Å			Bull.Min.,1972,95,360-364; Am.Min.,1974,59,210-211 (Abs.);Hölzel,180.
METANOVÁCEKITE	$Mg(UO_2)_2(AsO_4)_2.4H_2O$		Tet. P4/n	a=7.16Å Z=1 c=8.58Å			Hölzel,179;Str.Tab.,352.
METASIDERONATRITE	$Na_2Fe(SO_4)_2(OH).2H_2O$		Orth. Pbnm...	a=7.357Å Z=4 b=16.002Å c=7.102Å			Am.Min.,1973,58,1080-1081; RRW,399;Hölzel,136;Str.Tab., 297;Pov.,600.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
METATORBERNITE	$Cu(UO_2)_2(PO_4)_2.8H_2O$	$(H_2O)_8[Cu^{sq}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ (≈Meta-autunite)	Tet. P4/n	a=6.972Å Z=2 c=17.277Å	U_{I-II}(2c)Cu(2c) P(2a)O_{I-IV}(2c) O_{V-VIII}(8g) P(2b)	$(H_2O)_8[Cu^{sq}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ METATORBERNITE	Zeit.Krist.,1993,205,1-7;SR, 29,375-377;Pov.,556-557;Str. Tab.,352;RRW,400;Am.Min., 1964,49,1603-1621;K/B,95-96.
METATYUYAMUNITE	$Ca(UO_2)_2(VO_4)_2.3H_2O$	$Ca(H_2O)_3\{2\infty\}[(UO_2)_2V_2O_8]$ (≈Carnotite)	Orth. Pnam	a=10.54Å Z=4 b=8.49Å c=17.34Å			RRW,400;Str.Tab.,357;Pov., 503;Hölzel,183.
META-URANOCIRCITE-I	$Ba(UO_2)_2(PO_4)_2.8H_2O$	$(H_2O)_8[Ba\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ (≈Meta-autunite)	Tet. $P4_2/n$...	a=6.96Å Z=2 c=16.90Å			RRW,401;Pov.,556;Str.Tab., 352;K/B,96-97;Hölzel,182.
META-URANOSPINITE	$Ca(UO_2)_2(AsO_4)_2.8H_2O$	$(H_2O)_8[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$ (≈Meta-autunite)	Tet. P4/nmm	a=7.19Å Z=1 c=8.81Å			Str.Tab.,353;RRW,401; Hölzel,180.
METAVAUXITE	$FeAl_2(PO_4)_2(OH)_2.8H_2O$	$Fe^oAl_2^tP_2^t[O_8(OH)_2(H_2O)_8]$	Mon. $P2_1/c$	a=10.22Å β=97.9° b=9.56Å Z=2 c=6.94Å	Fe(2a)Al(4e) P(4e)O_{I-IV}(4e) O_{V-VIII}(4e) for OH(4e)$P4_2/nmc$		SR,32A,367-368;Pov.,560;Str. Tab.,341;RRW,402;Hölzel,170.
METAZELLERITE	$Ca(UO_2)(CO_3)_2.3H_2O$		Orth. $Pbn2_1$...	a=9.718Å Z=4 b=18.226Å c=4.965Å			Am.Min.,1966,51,1567-1578; Pov.,625;Str.Tab.,249;RRW, 403;Hölzel,109.
METAZEUNERITE	$Cu(UO_2)_2(AsO_4)_2.8H_2O$	$(H_2O)_8[Cu^{sq}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$	Tet. P4/n	a=7.10Å Z=2 c=17.70Å	U(4d)2Cu(4d) As(4c)O_{I-II}(4d) O_{III-IV}(8g)...	$(H_2O)_8[Cu^{sq}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ METATORBERNITE	SR,24,415-416Am.Min.,1964, 49,1603-1621;;RRW,403;Pov., 522;Str.Tab.,353;Hölzel,180.
MILARITE	$(K,Na)Ca_2(Be,Al)_3Si_{12}O_{30}.H_2O$	$(H_2O)(K,Na)^{[12]}Ca_2^o(Be,Al)_3^t\{g\}[Si_{12}^tO_{30}]$ (=Armenite)	Hex. P6/mcc	a=10.40Å Z=2 c=13.80Å	K(2a)Ca(4c) (Be,Al)(6f) Si(24m)...		Sov.Phys.Cryst.,1975,19,460-462;Pov.,380;Str.Tab.,409;RW 406;Hölzel,210;SR,15,301-303.
MINYULITE	$KAl_2(PO_4)_2(OH,F).4H_2O$	$K^{[8]}\{2\infty\}[Al_2^oP_2^tO_8(OH,F)(H_2O)_4]$	Orth. Pba2	a=9.337Å Z=2 b=9.740Å c=5.522Å	K(2a)Al(4c) P(4c)F(4c) O_{I-IV}(4c)...		Am.Min.,1977,62,256-262; RRW,408;Pov.,551;Str.Tab., 346;SR,43A,251;K/B,80-81.
MITRIDATITE	$Ca_2Fe_3O_2(PO_4)_3.3H_2O$	$Ca_2^{[7]}(H_2O)_3\ 2\infty\}[Fe_3^oP_3^tO_{14}]$ (=Arseniosiderite)	Mon. A2/a	a=17.53Å β=95.92° b=19.35Å Z=8 c=11.25Å			Min.Mag,1977,41,527-528;Am. Min.,1974,59,48-59;SR,43A, 256-257;RRW,409;Hölzel,175.
MIXITE	$Cu_6Bi(AsO_4)_3(OH)_6.3H_2O$		Hex. $P6_3/m$	a=13.646Å Z=2 c=5.920Å	Bi(2d)Cu(12i) As(6h)O_{I-V}(6h) O_{VI}(12i)		SR,54A,250;Pov.,519;Str.Tab., 350;Hölzel,177.
MONGOLITE	$Ca_4Nb_6Si_5O_{24}(OH)_{10}.6H_2O$		Tet. ?	a=7.00Å Z=1 c=29.0Å			Am.Min.,1986,71,1279(Abs.); Hölzel,192.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MONSMEDITE	$H_8K_2Tl_2(SO_4)_8$ $.11H_2O$		Cub. Fd3c	a=25.29Å			Am.Min,1995,80,634(Abs.); Am.Min.,1969,54,1496(Abs.); Pov.,606;Str.Tab.,555;RRW, 415; Hölzel,128.
MONTEREGIANITE-(Y)	$K_2Na_4Y_2Si_{16}O_{38}$ $.10H_2O$	$K_2^{[10]}(H_2O)_{10}Na_4^{o}Y_2^{o}$ $\{2\infty\}[Si_{16}^{t}O_{38}]$ (≈Hydroxyapophyllite)	Mon. $P2_1/n$	a=9.512Å β=93.85° b=23.956Å Z=2 c=Å9.617	$K_{I-II}(4e)Na_I(4e)$ $Na_{II-III}(2d)Y(4e)$ ...		Am.Min,1987,72,365-374; Hölzel,237.
MONTMORILLONITE	$(Na,Ca)_{0.3}(Al,Mg)_2$ $Si_4O_{10}(OH)_2.nH_2O$	$(H_2O)_n(Na,Ca)_{0.3}^{o}$ $(Al,Mg)_2^{o}(OH)_2$ $\{2\infty\}[Si_4^{t}O_{10}]^{(2.s)c}$	Mon. C2/m	a=5.18Å β=99°54' b=8.96Å Z=2 c=9.97Å		$(H_2O)_n(Na,Ca)_{0.3}^{o}(Al,Mg)_2^{o}$ $(OH)_2\{2\infty\}[Si_4^{t}O_{10}]^{(2.s)c}$ MONTMORILLONITE	LF,232;Wyckoff,4,372-373; Pov.,445;Str.Tab.,445;RRW, 417;SR,16,368-369.
MONTROYALITE	$Sr_4Al_8(CO_3)_3$ $(OH,F)_{26}.10H_2O$		Tric. ?	?			Can.Min.,1986,24,455-459; Hölzel,108;Am.Min.,1987,72, 1025(Abs.).
MOUNTKEITHITE	$(Mg,Ni)_{11}(Fe,Cr)_3$ $(SO_4,CO_3)_{3.5}$ $(OH)_{24}.11H_2O$		Hex. ?	a=10.698Å Z=0.5? c=22.54Å			Min.Mag.,1981,44,345-350; Hölzel,108.
MUNDRABILLAITE	$(NH_4)_2Ca(PO_3OH)_2$ $.H_2O$		Mon. Pm...	a=8.643Å β=98.0° b=8.184Å Z=2 c=6.411Å			Min.Mag.,1983,47,80-81: Hölzel,166;K/B,159.
MURMANITE	$Na_3(Ti,Nb)_4O_4$ $(Si_2O_7)_2.4H_2O$	$Na_3^{o}(Ti,Nb)_4^{o}Si_4^{t}$ $[O_{18}(H_2O)_4]$ (≈Bafertisite)	Tric. P $\bar{1}$?	a=8.700Å α=94.31° b=8.728Å β=98.62° c=11.688Å γ=105.6° Z=1			Sov.Phys.Cryst.,1986,31,44-48;Hölzel,200;Str.Tab.,395; Pov.,454.
NATROAPOPHYLLITE	$NaCa_4Si_8O_{20}F$ $.8H_2O$	$Ca_4^{[7]}Na^{[8]}F(H_2O)_8$ $\{2\infty\}[Si_8^{t}O_{20}]^{s}$	Orth. Pnnm	a=8.875Å Z=2 b=8.881Å c=15.79Å	Na(2b)F(2a) $Ca_{I-II}(4g)Si_{III}(8h)$ $O_{I-VII}(8h)$...	Dist.deriv. $Ca_4^{[7]}K^{[8]}(OH,F)(H_2O)_8$ $\{2\infty\}[Si_8^{t}O_{20}]^{s}$ HYDROXYAPOPHYLLITE	Am.Min.,1981,66,410-415, 416-423;Hölzel,226;Encyc. Miner.Nam.,212.
NATROCHALCITE	$NaCu_2(SO_4)_2(OH)$ $.H_2O$	$Na^{[8]}\{2\infty\}[Cu_2^{o}S_2^{t}O_8$ $(OH)(H_2O)]$	Mon. C2/m	a=8.75Å β=118°40' b=6.16Å Z=2 c=7.44Å	Cu(4e)Na(2d) S(4i)$O_{I-II}(4i)$ $O_{III}(8j)$...		SR,22,470-471;Zeit.Krist., 1989,187,239-247Zeit.Krist., 1998,213,141-150.
NATRODUFRENITE	$NaFe_6(PO_4)_4(OH)_6$ $.2H_2O$	$\{3\infty\}[Na^{o}Fe_6^{o}P_4^{t}O_{16}$ $(OH)_6(H_2O)_2]$ (=Dufrenite)	Mon. C2/c	a=25.83Å β=111°32' b=5.150Å Z=4 c=13.772Å			Am.Min.,1983,68,1039 (Abs.);Hölzel,171;Encyc. Miner.Nam.,212.
NENADKEVICHITE	$Na(Nb,Ti)Si_2O_6$ $(O,OH).2H_2O$	$Na^{[6]}(H_2O)_2\{3\infty\}[$ $\{3\infty\}[(Nb,Ti)^{o}Si_2^{t}O_6$ $(O,OH)]$	Orth. Pbam	a=7.408Å Z=4 b=14.198Å c=7.148Å	$Na_I(4g)Na_{II}(4h)$ Si(8i)Nb(4h) (occ.v.)...		Acta Cryst.,1973,B29,1432-1438;Min.Abs.,87M/1267; Hölzel,198.
NISSONITE	$CuMgPO_4(OH).$ $2.5H_2O$		Mon. C2/c...	a=22.58Å β=99°20' b=5.027Å Z=8 c=10.514Å			Am.Min.,1967,52,927(Abs.); Hölzel,167;Pov.,549;Str.Tab., 41;RRW,438.
NONTRONITE	$Na_{0.3}Fe_2(Si,Al)_4O_{10}$ $(OH)_2.nH_2O$	$(H_2O)_nNa_{0.3}^{o}$ $Fe_2^{o}(OH)_2$ $\{2\infty\}[(Si,Al)_4^{t}O_{10}]^{(2.s)c}$	Mon. C2/m	a=5.23Å β~98° b=9.11Å Z=1? c=15.5Å		$(H_2O)_n(Na,Ca)_{0.3}^{o}(Al,Mg)_2^{o}$ $(OH)_2\{2\infty\}[Si_4^{t}O_{10}]^{(2.s)c}$ MONTMORILLONITE	LF,232;RRW,440;Pov.,445; Str.Tab.,445;Am.Min.,1975; 60,840-848.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
NOVÁCEKITE	$Mg(UO_2)_2(AsO_4)_2.9H_2O$	$(H_2O)_9[Mg^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$ (≈Autunite)	Tet. $P4_2/n$	a=7.11Å Z=2 c=20.06Å			RRW,443;Str.Tab.,351;Pov., 751;Hölzel,179.
OGDENSBURGITE	$(Ca,Zn,Mn)_4Fe_6(AsO_4)_5(OH)_{11}.5H_2O$		Orth. Bmmm...	a=11.351Å Z=2? b=14.837Å c=6.555Å			Am.Min.,1987,72,409-412; Hölzel,176.
OHMILITE	$Sr_3(Ti,Fe)(Si_2O_6)_2(O,OH).2H_2O$	$Sr_2^{[9]}Sr^{[8]}(Ti,Fe)^o(O,OH)(H_2O)_2\{1\infty\}[Si_4^tO_{12}]$	(Mon. $P2_1/m$	a=10.979Å β=100.90° b=7.799Å Z=2 c=7.818Å	$Sr_{I\text{-}III}$(2e) Ti(2a)$Si_{I\text{-}II}$(4f) ...		Am.Min.,1983,68,811-817; Hölzel,225.
OJUELAITE	$ZnFe_2(AsO_4)_2(OH)_2.4H_2O$	$Zn^oFe_2^oAs_2^t[O_8(OH)_2(H_2O)_4]^{c/h}$ (≈Arthurite)	Mon. $P2_1/c$	a=10.247Å β=94°22' b=9.665Å Z=2 c=5.569Å			Am.Min.,1982,67,623-624 (Abs.);Hölzel,170.
ORTHOSERPIERITE	$Ca(Cu,Zn)_4(SO_4)_2(OH)_6.3H_2O$	$\{3\infty\}[Ca^{[7]}(Cu,Zn)_4^{[6]}S_2^tO_8(OH)_6(H_2O)_3]$ (≈Serpierite)	Orth. $Pca2_1$	a=22.10Å Z=8 b=6.20Å c=20.39Å			Am.Min.,1987,72,1026(Abs.); Hölzel,136;Zeit.Krist.,1998, 213,141-150.
OURSINITE	$(Co,Mg)(UO_2)_2Si_2O_7.6H_2O$		Orth. Aba2...	a=12.74Å Z=4 b=17.55Å c=7.050Å			Am.Min.,1984,69,567(Abs.); Hölzel,196.
PAHASAPAITE	$Li_8(Ca,Li,K)_{10.5}Be_{24}(PO_4)_{24}.38H_2O$	$Li_8^{[6p1c]}(Ca,Li,K)_{10.5}^{[6p1c]}(H_2O)_{38}\{3\infty\}[Be_{24}^tP_{24}^tO_{96}]$ (≈Zeolite)	Cub. I 23	a=13.781Å Z=1	$(Ca,Li,K)_I$(24f) $(Ca,Li,K)_{II}$(8c) P(24f)Be(24f)...		Am.Min.,1989,74,1195-1202; Hölzel,159.
PARAROBERTSITE	$Ca_2Mn_3(PO_4)_3O_2.3H_2O$		Mon. $P2_1/c$	a=8.825Å β=101.19° b=13.258Å Z=4 c=11.087Å			Can.Min.,1989,27,451-455; Hölzel suppl....
PARAUMBITE	$K_3Zr_2H(Si_3O_9)_2.3H_2O$	$K_3Zr_2^o(H_2O)_3\{1\infty\}[Si_3O_9]_2.$ (≈Wollastonite)	Orth. ?	a=10.34Å Z=4 b=13.29Å c=14.55Å			Am.Min.,1984,69,813-814 (Abs.);Hölzel,205
PARAVAUXITE	$FeAl_2(PO_4)_2(OH)_2.8H_2O$	$Fe^oAl_2^oP_2^t[O_8(OH)_2(H_2O)_8]$ (≈Laueite)	Tric. P $\bar{1}$	a=5.233Å α=106.9° b=10.541Å β=110.8° c=6.96Å γ=72.1° Z=1	Fe(1a)Al_I(1c) Al_{II}(1g)P(2i) $O_{I\text{-}IX}$(2i)...		SR,34A,332-333;Am.Min., 1962,47,1-8;Hölzel,171;Pov., 560-561;Str.Tab.,342;RRW, 464.
PARSONSITE	$Pb_2(UO_2)(PO_4)_2.0\text{-}2H_2O$		Tric. P $\bar{1}$	a=6.862Å α=101°26' b=10.425Å β=98°15' c=6.684Å γ=86°17' Z=2			SR,22,422;Pov.,554;Str.Tab., 350;RRW,465-466;Hölzel,182.
PARTHÉITE	$Ca_2Al_4Si_4O_{15}(OH)_2.4H_2O$	$Ca_2Al_4^o(OH)_2(H_2O)_4\{3\infty\}[Si_4^tO_{15}]$ (≈Zeolite)	Mon. C2/c	a=21.555Å β=91.55° b=8.761Å Z=4 c=9.304Å	$Si_{I\text{-}II}$(8f)$Al_{I\text{-}II}$(8f) Ca(8f)$O_{I\text{-}VII}$(8f) O_{VIII}(4e) ...		Zeit.Krist.,1984,169,165-175; Am.Min.,1980,65,1068(Abs.); Hölzel,246.
PENTAGONITE	$Ca(VO)Si_4O_{10}.4H_2O$	$(H_2O)_4\{3\infty\}[Ca^{[7]}V^{[5y]}Si_4^tO_{11}]$ (≈Cavansite)	Orth. $Ccm2_1$	a=10.386Å Z=4 b=14.046Å c=8.975Å	Ca(4a)V(4a) $Si_{I\text{-}II}$(8b)$O_{I\text{-}VI}$(8b) $O_{VII\text{-}IX}$(4a)		Am.Min.,1973,58,405-411;Am. Min.,1973,58,412-414;RRW, 470-471;SR,39A,338.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
PETARASITE	$Na_5Zr_2Si_6O_{18}$ $(Cl,OH).2H_2O$	$Na_5^{[7]}(Cl,OH)(H_2O)_2$ $\{3\infty\}[Zr_2^{o}Si_6^{t}O_{18}]$	Mon. $P2_1/m$	a=10.796Å β=113.21° b=14.493Å Z=2 c=6.623Å			SR,46A,391;Min.Abs., 83M/5067;Hölzel,208.
PETERSITE-(Y)	$Cu_6(Y,Ca)(PO_4)_3$ $(OH)_6.3H_2O$		Hex. $P6_3/m$...	a=13.288Å Z=2 c=5.877Å			Am.Min.,1982,67,1039-1042; Hölzel,177;K/B,161.
PHARMACOSI-DERITE	$KFe_4(AsO_4)_3(OH)_4$ $6\text{-}7H_2O$	$K^{[12]}(OH)_4(H_2O)_{6\text{-}7}$ $\{3\infty\}[Fe_4^{o}As_3^{t}O_{12}]$	Cub. $P\bar{4}3m$	a=7.98Å Z=1	Fe(4e)As(3d) $O_I(12i)O_{II\text{-}III}(4e)$ $O_{IV}(3c)$ ...		Zeit.Krist.,1967,125,92-108; SR,32A,384-385;Pov.,507-508 Str.Tab.,348;RRW,474-475.
PHILLIPSITE	$K(Ca_{0.5},Na)_2$ $(Si_5,Al_3)O_{16}.6H_2O$	$K^{[12]}(Ca_{0.5},Na)_2^{[6]}$ $(H_2O)_6$ $\{3\infty\}[Si_5^{t}Al_3^{t}O_{16}]$ (Zeolite)	Mon. $P2_1/m$	a=9.865Å β=124.20° b=14.300Å Z=2 c=8.668Å	K(2e)Ca(4f) $(Si,Al)_{I\text{-}IV}(4f)$ ...	$K^{[12]}(Ca_{0.5},Na)_2^{[6]}$ $(H_2O)_6$ $\{3\infty\}[Si_5^{t}Al_3^{t}O_{16}]$ PHILLIPSITE	Acta Cryst.,1974,B30,2426-2433;SR,27,692-693; Hölzel, 244;LF,296;Pov.,353.
PHYLLOTUNGS-TITE	$HCaFe_3(WO_4)_6$ $.10H_2O$		Orth. P222...	a=7.29Å Z=3 b=12.59Å c=19.55Å			Am.Min.,1986,71,846(Abs.); Hölzel,140.
POLYHALITE	$K_2Ca_2Mg(SO_4)_4$ $.2H_2O$	$K_2^{[11]}Ca_2^{[8]}Mg^{o}(H_2O)_2$ $\{3\infty\}[Si_4^{t}O_{16}]$ (≈Phillipsite)	Tric. $P\bar{1}$	a=11.69Å α=91.6° b=16.33Å β=90.0° c=7.60Å γ=91.9° Z=4	K(8i)Ca(8i) Mg(4a)$Si_{I\text{-}II}(8i)$ $O_{I\text{-}VIII}(8i)$ $(H_2O)(8i)$		LF,320;SR,40A,309;SR,26,449 ;Pov.,594;Str.Tab.,290.
POUGHITE	$Fe_2(TeO_3)_2(SO_4)$ $.3H_2O$	$Fe_2^{o}(H_2O)_3$ $\{g\}[Te^{[4y]}O_3]_2\{g\}[S^{t}O_4]$	Orth. Pmnb	a=9.66Å Z=4 b=14.20Å c=7.86Å			Am.Min.,1968,53,1075-1080; SR,37A,318;Pov.,565;Str.Tab., 228; Hölzel,93.
PROBERTITE	$NaCaB_5O_7(OH)_4$ $.3H_2O$	$Na^{[6]}Ca^{[9]}(H_2O)_3$ $\{1\infty\}[B_3^{t}B_2^{tr}O_7(OH)_4]$	Mon. $P2_1/c$	a=6.588Å β=99.97° b=12.560Å Z=4 c=13.428Å	Na(4e)Ca(4e) $B_{I\text{-}V}(4e)$ $O_{I\text{-}IX}(4e)$ ...		Acta Cryst.,1982,B38,3072-3075;Sov.Phys.Cryst.,1966,10, 513-522;Pov.,484-485.
PROTASITE	$Ba(UO_2)_3O_3(OH)_2$ $.3H_2O$		Mon. Pn	a=12.2949Åβ=90.401° b=7.2206Å Z=2 c=6.9558Å	$O_{I\text{-}III}(4e)$Ba(4e) ...		Am.Min.,1987,72,1230-1238; Min.Mag.,1986,50,125-128; Hölzel,90.
PSEUDOLAUEITE	$MnFe_2(PO_4)_2(OH)_2$ $.7\text{-}8H_2O$	$Mn^{o}Fe_2^{o}P_2^{t}$ $[O_8(OH)_2(H_2O)_{7\text{-}8}]$	Mon. $P2_1/a$	a=9.647Å β=104.63° b=7.428Å Z=2 c=10.194Å	Mn(2a)Fe(4e) P(4e)$O_{I\text{-}IX}(4e)$		Am.Min.,1969,54,1312-1323; SR,34A,331-332;Pov.,560-561;Str.Tab.,341;RRW,495.
PYROAURITE	$Mg_6Fe_2CO_3(OH)_{16}$ $.4H_2O$	$Mg_6^{o}Fe_2^{o}(OH)_{16}$ $\{2\infty\}[(C^{tr}O_3)(H_2O)_4]$	Trig. $R\bar{3}m$	a=3.1094Å Z=3/8 c=23.4117Å	(Mg,Fe)(3a) (OH)(6c)O(3b) ...		Acta Cryst.,1968,B24,972-977;SR,33A,439-440;SR,40A, 306;Pov.,755;Str.Tab.,248.
RAMEAUITE	$K_2CaO_8(UO_2)_6$ $.9H_2O$		Mon. C2/c	a=13.97Å β=121°1' b=14.26Å Z=4 c=14.22Å			Min.Mag.,1972,38,781-789; RRW,508;Hölzel,89.
RAPIDCREEKITE	$Ca_2(SO_4)(CO_3)$ $.4H_2O$	$\{3\infty\}[Ca_2^{[8ap]}S^{t}O_4$ $C^{tr}O_3(H_2O)_4]$	Orth. Pcnb	a=15.517Å Z=8 b=19.226Å c=6.164Å	$Ca_{I\text{-}II}(8d)S(8d)$ $C(8d)O_{I\text{-}VIII}(8d)$..		Can.Min.,1996,34,99-106;Can. Min.,1986,24,51-54;Hölzel, 137.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
RECTORITE	$(Na,Ca)Al_4(Si,Al)_8O_{20}(OH)_4.2H_2O$	$(H_2O)_2(Na,Ca)^{o}Al_4^{o}(OH)_4\{2\infty\}[(Si,Al)_8^{t}O_{20}]^{(2.s)c}$ (≈Montmorillonite)	Mon. ?	a=5.13Å β=96.3° b=8.88Å Z=2 c=23.85Å			Sov.Phys.Cryst.,1971,16,250-253;Hölzel,231;Pov.,445-446; RRW,512;Str.Tab.,463.
REEVESITE	$Ni_6Fe_2CO_3(OH)_{16}.4H_2O$	$Ni_6^{o}Fe_2^{o}(OH)_{16}\{2\infty\}[(C^{tr}O_3)(H_2O)_4]$ (=Pyroaurite)	Trig. R3m	a=6.614Å Z=3 c=45.54Å			Am.Min.,1971,56,1077-1081; Encyc.Miner.Nam.,254;Hölzel, 107;RRW,513;Str.Tab.,248.
RHODESITE	$(K,Na)_2Ca_4Si_{16}O_{36}(OH)_2.10H_2O$	$(H_2O)_{10}(K,Na)_2Ca_4(OH)_2\{2\infty\}[Si_{16}^{t}O_{36}]$	Orth. Pmam	a=23.416Å Z=1 b=6.555Å c=7.050Å	K(2e) Ca_I(2c) Ca_{II}(2d) Si_{I-II}(4j) Si_{III}(8l) ...		Zeit.Krist.,1992,199,25-48;Zeit. Krist.,1979,149,155-157;Pov., 434;Str.Tab.,469;Hölzel,237.
RIVADAVITE	$Na_6Mg(B_6O_7(OH)_6)_4.10H_2O$		Mon. $P2_1/m$	a=14.779Å β=105°57' b=8.010Å Z=1 c=11.128Å			Am.Min.,1967,52,326-335; Pov.,487-488;Str.Tab.,261; RRW,520;Hölzel,116.
ROBERTSITE	$Ca_2Mn_3O_2(PO_4)_3.3H_2O$	$Ca_2^{[7]}(H_2O)_3\{2\infty\}[Mn_3^{o}P_3^{t}O_{12}]$ (=Arseniosiderite)	Mon. A2/a	a=17.36Å β=96.0° b=19.53Å Z=8 c=11.30Å			Am.Min.,1974,59,48-59;RRW, 521;Hölzel,175;K/B,157.
RUIZITE	$Ca_2Mn_2Si_4O_{11}(OH)_4.2H_2O$		Mon. C2/m	a=9.064Å β=91.38° b=6.171Å Z=2 c=11.976Å	Mn(4e)Ca(4i) Si_{I-II}(4i)...		Am.Min.,1985,70,171-181;Min. Mag.,1977,41,429-432;Hölzel, 204.
SALÉEITE	$Mg(UO_2)_2(PO_4)_2.10H_2O$	$(H_2O)_{10}[Mg^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$	Mon. $P2_1/c$	a=6.951Å β=135.17° b=19.947Å Z=2 c=9.896Å	U(4e)Mg(2d) P(4e)O_{I-XI}(4e)	Dist.deriv. $(H_2O)_{10}[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ AUTUNITE	Zeit.Krist.,1986,177,247-253; LF,245;RRW,533;Pov.,756, 521;Str.Tab.,351;Hölzel,179.
SANTACLARAITE	$CaMn_4Si_5O_{14}(OH)_2.H_2O$	$(H_2O)HCa^{o}Mn_4^{o}(OH)\{1\infty\}[Si_5^{t}O_{15}]$ (≈Rhodonite)	Tric. B $\bar{1}$	a=15.633Å α=109.71° b=7.603Å β=88.61° c=12.003Å γ=99.95° Z=4			Am.Min.,1984,69,200-206;Am. Min.,1981,66,154-168;Hölzel, 222.
SANTAFEITE	$(Ca,Sr,Na)_3(Mn,Mg,Al,Fe)_4(VO_4)_4(OH)_5.2H_2O$		Orth. $B22_12$	a=9.25Å Z=2? b=30.00Å c=6.33Å			Min.Mag,1986,50,299-300;Am. Min.,1958,43,677-687;RRW, 536;Pov.,496;Str.Tab.,349.
SAPONITE	$(Ca,Na)_{0.3}(Mg,Fe)_3(Si,Al)_4O_{10}(OH)_2.4H_2O$	$(H_2O)_4(Ca,Na)_{0.3}(Mg,Fe)_3^{o}(OH)_2\{2\infty\}[(Si,Al)_4^{t}O_{10}]^{(2.s)c}$	Mon. Cc	a=5.3Å β~97° b=9.21Å Z=2? c=15.36Å			Str.Tab.,446;Hölzel,231;LF, 233;Pov.,446;Min.Abs.,78-2716.
SAUCONITE	$Na_{0.3}Zn_3(Si,Al)_4O_{10}(OH)_2.4H_2O$	$(H_2O)_4Na_{0.3}Zn_3(OH)_2\{2\infty\}[(Si,Al)_4^{t}O_{10}]^{(2.s)c}$ (≈Vermiculite)	Mon. Cc	a=5.3Å β~97° b=9.17Å Z=1.5? c=30.7Å			Hölzel,232;LF,233;Pov.,446; Str.Tab.,446.
SAYRITE	$Pb_2(UO_2)_5O_6(OH)_2.4H_2O$		Mon. $P2_1/c$	a=10.704Å β=116.81° b=6.960Å Z=2 c=14.533Å			Am.Min.,1984,69,568(Abs.); Hölzel,90.
SAZHINITE-(Ce)	$Na_2CeSi_6O_{14}(OH).6H_2O$	$(H_2O)_6HNa_2^{[5]}Ce^{[6+1]}\{2\infty\}[Si_6^{t}O_{15}]$	Orth. Pmm2	a=7.50Å Z=2 b=15.62Å c=7.55Å	NaI(2e)Na_{II}(2g) Ce(2g)Si_{I-II}(4i) Si_{III-IV}(2g)...		Sov.Phys.Cryst.,1980,25,419-423;SR,46A,393-394;Am.Min., 1975,60,162(Abs.).

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SCAWTITE	$Ca_7(Si_3O_9)_2(CO_3)$ $.2H_2O$	$Ca_7^{o}Si_6^{t}C^{tr}$ $[O_{21}(H_2O)_2]$	Mon. I 2/m	a=10.118Å β=100°40' b=15.187Å Z=2 c=6.626Å	$Ca_I(8i)Ca_{II}(4h)$ $Ca_{III}(2d)Si_I(8i)$ $Si_{II}(4g)$...		Acta Cryst.,1973,B29,73-80; SR,31A,350-351.Pov.,419-420;Str.Tab.,424;RRW,541; Hölzel,220;
SCHAURTEITE	$Ca_3Ge(SO_4)_2(OH)_6$. $.3H_2O$	$\{3\infty\}[Ca_3^{[9]}Ge^{o}S_2^{t}O_8$ $(OH)_6(H_2O)_3]$ (=Fleischerite)	Hex. $P6_3/mmc$...	a=8.525Å Z=2 c=10.803Å			Am.Min.,1968,53,507(Abs.); Am.Min.,1967,52,926-927 (Abs.);Str.Tab.,296;RRW,543.
SCHERTELITE	$(NH_4)_2Mg(PO_3OH)_2$ $.4H_2O$	$\{3\infty\}[Mg^{o}P_2^{t}O_6(NH_4)_2$ $(OH)_2(H_2O)_4]$	Orth. Pbca	a=11.49Å Z=8 b=23.66Å c=8.62Å	$P_{I-II}(8c)Mg(8c)$ $O_{I-VIII}(8c)$...		Acta Cryst.,1972,B28,683-693; Am.Min.,1963,48,635-641; Pov.,548;Str.Tab.,338.
SCHODERITE	$Al_2(PO_4)(VO_4)$ $.8H_2O$		Mon. P2/m?	a=16.26Å β=91.77° b=30.60Å Z=18 c=12.55Å			Am.Min.,1979,64,713-720;Am. Min.,1962,47,637-648;Pov., 496;Str.Tab.,334.
SERPIERITE	$Ca(Cu,Zn)_4(SO_4)_2$ $(OH)_6.3H_2O$	$\{3\infty\}[Ca^{[7]}(Cu,Zn)_4^{o}$ $S_2^{t}O_8(OH)_6(H_2O)_3]$	Mon. C2/c	a=22.186Å β=113.36° b=6.250Å Z=8 c=21.853Å	$Ca(8f)Cu_{I-III}(8f)$ $Cu_{IV-V}(4e)$ $S_{I-II}(8f)$...		Acta Cryst.,1968,B24,1214-1221;Am.Min.,1969,54,328-329(Abs.);Pov.,605;Str.Tab., 296;SR,33A,382-384.
SHABYNITE	$Mg_5BO_3(OH)_5$ $(Cl,OH)_2.4H_2O$		Mon. ?	?			Am.Min.,1981,66,1101(Abs.); Hölzel,112.
SHIGAITE	$Mn_7Al_4(SO_4)_2$ $(OH)_{22}.8H_2O$		Trig. $R\bar{3}$	a=9.512Å c=33.074Å Z=3	$Mn(18f)\ Al_I(6c)$ $Al_{II}(18f)$ ...		Can.Min.,1996,34,91-97;Am. Min.,1986,71,1546(Abs.); Hölzel,132.
SIDERONATRITE	$Na_2Fe(SO_4)_2(OH)$ $.3H_2O$		Orth. Pbnm	a=7.27Å Z=4 b=20.50Å c=7.15Å			RRW,559;Pov.,600;Str.Tab., 297;Hölzel,136.
SIELECKIITE	$Cu_3Al_4(PO_4)_2(OH)_{12}$ $.2H_2O$		Tric. $P\ \bar{1}$ ...	a=9.41Å α=90.25° b=7.56Å β=91.27° c=5.95Å γ=104.02° Z=1			Min.Mag.,1988,52,515-518; Min.Abs.,88-6097;Hölzel,172.
SIGLOITE	$FeAl_2(PO_4)_2(OH)_3$ $.7H_2O$	$Fe^{o}Al_2^{o}P_2^{t}$ $[O_8(O,OH)(H_2O)_8]$ (=Laueite)	Tric. $P\ \bar{1}$	a=5.26Å α=106°58' b=10.52Å β=111°30' c=7.06Å γ=69°30' Z=1			Am.Min.,1962,47,1-8;Pov.,560-561;Str.Tab.,342;RRW,560; Hölzel,171;Am.Min.,1988,74, 1404(Abs.).
SINCOSITE	$Ca(VO)_2(PO_4)_2$ $.5H_2O$	$(H_2O)_5[Ca^{[6]}$ $\{2\infty\}[VO\ P^{t}O_4]_2]$	Tet. ?	a=8.895Å Z=2 c=12.727Å		Deriv. $(H_2O)_6[Ca^{[6]}$ $\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ META-AUTUNITE	Am.Min.,1985,70,409-410; Hölzel,177;K/B,175;Str.Tab., 353.
SJÖGRENITE	$Mg_6Fe_2CO_3(OH)_{16}$ $.4H_2O$	$Mg_6^{o}Fe_2^{o}C^{tr}$ $[O_3(OH)_{16}(H_2O)_4]$ (=Barbertonite)	Hex. $P6_3/mmc$	a=3.13Å Z=1/4 c=15.66Å	$(Mg,Fe)(2a)$ $C(2b)O_I(4f)$ $O_{II}(6h)$...		Min.Mag.,1967,36,465-479; SR,32A,422;Hölzel,107;Pov., 331;Str.Tab.,247.
SODIUM AUTUNITE	$Na_2(UO_2)_2(PO_4)_2$ $.8H_2O$	$(H_2O)_8[Na_2^{[6]}$ $\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$	Tet. P4/nmm	a=6.97Å Z=1 b=8.69Å		Deriv. $(H_2O)_{10}[Ca^{[6]}$ $\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ AUTUNITE	Am.Min.,1958,43,383(Abs.); Am.Min.,1995,80,1329(Abs.); LF,245;RRW,568.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SODIUM PHARMACOSIDERITE	$(Na,K)_2Fe_4(AsO_4)_3(OH)_5.7H_2O$		Cub. $P\bar{4}3m$	a=8.012Å Z=2			Am.Min.,1986,71,230(Abs.); Hölzel,172.
SODIUM-URANOSPINITE	$(Na_2,Ca)(UO_2)_2(AsO_4)_2.5H_2O$		Tet. P4/nmm	a=7.12Å Z=1 c=8.61Å			RRW,569;Hölzel,180.
SÖRENSENITE	$Na_4Be_2Sn(Si_3O_9)_2.2H_2O$	$Na_4^{[7]}Be_2{}^tSn^o(H_2O)_2\{1\infty\}[Si_3{}^tO_9]_2{}^{my}$ (≈Wollastonite)	Mon. C2/c	a=20.698Å β=117.28° b=7.442Å Z=4 c=12.037Å	Na_{I-II}(8f) Sn(4c) ...		Acta Cryst.,1976,B32,2553-2556;Am.Min.,1966,51,1547-1548(Abs.);Hölzel,221.
SOUZALITE	$(Mg,Fe)_3(Al,Fe)_4(PO_4)_4(OH)_6.2H_2O$		(Tric.) A2/m	a=12.58Å β~113° b=5.10Å Z=2 c=13.48Å			Encyc.Miner.Nam.,281;Hölzel, 171;Can,Min,,1981,19,381-387.
SPHENISCIDITE	$(NH_4,K)(Fe,Al)_2(PO_4)_2(OH).2H_2O$		Mon. $P2_1/n$	a=9.75Å β=102°34' b=9.63Å Z=4 c=9.70Å			Min.Mag.,1986,50,291-293; Hölzel,173.
STERCORITE	$(NH_4)Na(PO_3OH).4H_2O$	$Na^oP^t[O_3(OH)(NH_4)(H_2O)_4]$ (≈Laueite)	Tric. $P\bar{1}$	a=10.636Å α=90.46° b=6.9187Å β=97.87° c=6.4359Å γ=109.20° Z=2	P(2i) Na(2i) O_{I-IV}(2i) N(2i) ...		Acta Cryst.,1974,B30,504-510; SR,40A,237-238.
STEWARTITE	$MnFe_2(PO_4)_2(OH)_2.8H_2O$	$Mn^oFe_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_8]$ (≈Laueite)	Tric. $P\bar{1}$	a=10.398Å α=90.10° b=10.672Å β=109.10° c=7.223Å γ=71.83° Z=2	Mn(2i)Fe_I(1a) Fe_{II}(1d)Fe_{III}(2i) P_{I-II}(2i) ...		Am.Min.,1974,59,1272-1276; K/B,68-69;SR,40A,247-248; Pov.,560;RRW,580.
STICHTITE	$Mg_6Cr_2CO_3(OH)_{16}.4H_2O$	$Mg_6{}^oCr_2{}^o(OH)_{16}\{2\infty\}[(C^{tr}O_3)(H_2O)_4]$ (=Pyroaurite)	Trig. R3m...	a=6.19Å Z=3 c=46.47Å			Str.Tab.,248;RRW,582;Hölzel, 107;Min.Mag.,1973,39,377-389;RRW,582.
STILBITE	$NaCa_4(Si_{27}Al_9)O_{72}.30H_2O$	$Na^{[6]}Ca_4{}^{[6]}(H_2O)_{30}\{3\infty\}[Si_{27}{}^tAl_9{}^tO_{72}]$ (Zeolite)	Mon. C2/m	a=13.64Å β=128° b=18.24Å Z=1 c=11.27Å	Na(8j)(occ.0.22) Ca(4i)Si_{I-IV}(8j) Si_V(4g)...	$Na^{[6]}Ca_4{}^{[6]}(H_2O)_3\{3\infty\}[Si_{27}{}^tAl_9{}^tO_{72}]$ STILBITE	Acta Cryst.,1971,B27,833-841, LF,299;RRW,583;Str.Tab.,490; Pov.,354;Hölzel,246.
STRELKINITE	$Na_2(UO_2)_2(VO_4)_2.6H_2O$		Orth. Pnmm...	a=10.64Å Z=8 b=8.36Å c=32.72Å			Am.Min.,1975,60,488-489 (Abs.);Hölzel,183;K/B,174.
STRONTIODRESSERITE	$(Sr,Ca)Al_2(CO_3)_2(OH)_4.H_2O$	$(OH)_4\{3\infty\}[(Sr,Ca)^{[9]}Al_2{}^o(H_2O)\{g\}[C^{tr}O_3]_2]$ (=Dundasite)	Orth. Pbnm	a=9.176Å Z=4 b=16.010Å c=5.602Å			Min.Abs.,80-0189;Hölzel,108.
STRUNZITE	$MnFe_2(PO_4)_2(OH)_2.6H_2O$	$Mn^oFe_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_6]$ (≈Laueite)	Tric. $P\bar{1}$	a=10.228Å α=90.17° b=9.837Å β=98.44° c=7.284Å γ=117.44° Z=2			Min.Abs.,81-1246;SR,44A,249-250.
SVYAZHINITE	$(Mg,Mn)(Al,Fe)(SO_4)_2F.14H_2O$	$(Mg,Mn)^o(Al,Fe)^oS_2{}^t[O_8(H_2O)_{14}F]$ (≈Aubertite)	Tric. P1...	a=6.217Å α=90.09° b=13.306Å β=93.50° c=6.255Å γ=82.05° Z=1			Am.Min.,1985,70,877(Abs).; Hölzel,133.

Table 234 $A_pB_qC_rD_sE_x.nAq.$ (cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
TAKOVITE	$Ni_6Al_2CO_3(OH)_{16}.4H_2O$		Trig. ?	a=3.0250Å Z=0.38? c=22.595Å			Am.Min.,1977,62,458-464; Hölzel,107.
TARANAKITE	$H_6K_3(Al,Fe)_5(PO_4)_8.18H_2O$ (?)	$(Al,Fe)_5^{o}H_6K_3(H_2O)_{14}\{2\infty\}[P_8^{t}O_{20}(H_2O)_4]$ (≈Pyrophyllite)	Trig. R 3c...	a=8.71Å Z=6 c=96.1Å			Am.Min.,1976,61,329-331; Pov.,558;Str.Tab.,338;RRW, 604;Hölzel,173.
TERSKITE	$Na_4ZrSi_6O_{15}(OH)_2.H_2O$		Orth. Pnc2	a=14.195Å Z=4 b=14.750Å c=7.511Å			Am.Min.,1992,77,452(Abs.); Am.Min.,1984,69,212(Abs.); Hölzel,221.
THOMSONITE	$NaCa_2(Al_5,Si_5)O_2.6H_2O$	$NaCa_2(H_2O)_6\{3\infty\}[Al_5^{t}Si_5^{t}O_{20}]$ (Zeolite)	Orth. Pncn	a=13.088Å Z=4 b=13.052Å c=13.229Å		$NaCa_2(H_2O)_6\{3\infty\}[Al_5^{t}Si_5^{t}O_{20}]$ THOMSONITE	Min.Abs.,86M/1429;RRW,613-614;Pov.,355;Str.Tab.,487; Hölzel,243;LF,292.
THORBASTNÄSITE	$Th(Ca,Ce)(CO_3)_2F_2..3H_2O$		Hex. P 62c	a=6.99Å Z=3 b=9.71Å			Am.Min.,1965,50,1505(Abs.); Pov.,618;Str.Tab.,243;RRW, 614;Hölzel,102.
TINSLEYITE	$KAl_2(PO_4)_2(OH).2H_2O$	$K^{[6]}(H_2O)\{3\infty\}[Al_2^{o}(P^{t}O_4)_2(OH)(H_2O)]$ (=Leucophosphite)	Mon. P2/n ...	a=9.602Å β=103.16° b=9.532Å Z=4 c=9.543Å			Am.Min.,1984,69,374-376; Hölzel,173;K/B,155.
TORBERNITE	$Cu(UO_2)_2(PO_4)_2.10H_2O$	$(H_2O)_{10}[Cu^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$	Tet. I4/mmm	a=7.06Å Z=2 b=20.5Å	Cu(2a) P(4d) U(4e)	$(H_2O)_{10}[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ AUTUNITE	RRW,622;Pov.,555-557;Str. Tab.,351;Hölzel,179;LF,245; Wyckoff,1965,3,869-870.
TORREYITE	$(Mg,Mn)_9Zn_4(SO_4)_2(OH)_{22}.8H_2O$	$(Mg,Mn)_9^{o}Zn_4^{t}S_2^{t}[O_8(OH)_{22}(H_2O)_8]$ (=Lawsonbauerite)	Mon. $P2_1/c$	a=10.5Å β~95° b=9.6Å Z=2 c=16.4Å			Hölzel,132;Am.Min.,1982,67, 1029-1034;Am.Min.,1979,64, 949-952.
TOSUDITE	$Na_{0.5}(Al,Mg)_6(Si,Al)_8O_{18}(OH)_{12}.5H_2O$		Orth. ?	?			Am.Min.,1982,67,394-398; Pov.,762;Str.Tab.,463; Hölzel, 231;Am.Min.,1964,49,816 (Abs.);RRW,623.
TUPERSSUATSIAITE	$NaFe_3Si_8O_{20}(OH)_2.5H_2O$		Mon. C2/m	a=13.729Å β=104.28° b=18.000Å Z=? c=4.828Å			Am.Min.,1985,70,1332(Abs.); Hölzel,236.
TURQUOISE	$CuAl_6(PO_4)_4(OH)_8.4H_2O$	$Cu^{[6]}(H_2O)_4\{3\infty\}[Al_6^{o}(OH)_8(P^{t}O_4)_4]$	Tric. P $\bar{1}$	a=7.424Å α=68.61° b=7.629Å β=79.71° c=9.910Å γ=65.08° Z=1	Cu(1a) P_{I-II}(2i) Al_{I-III}(2i) ...	$Cu^{[6]}(H_2O)_4\{3\infty\}[Al_6^{o}(OH)_8(P^{t}O_4)_4]$ TURQUOISE	Zeit.Krist.,1965,121,87-113;LF, 281;SR,30A,395;Pov.,535;Str. Tab.,344;RRW,634.
TYUYAMUNITE	$Ca(UO_2)_2(VO_4)_2.5\text{-}8H_2O$	$Ca(H_2O)_{5\text{-}8}\{2\infty\}[(UO_2)_2(V_2O_8)]$ (≈Carnotite)	Orth. Pnan	a=10.36Å Z=4 b=8.36Å c=20.40Å			RRW,636;Pov.,503;Str.Tab., 357;Hölzel,183.
UKLONSKOVITE	$NaMgSO_4(OH,F).2H_2O$	$Na^{[8]}Mg^{[6]}S^{t}[O_4(OH,F)(H_2O)_2]$	Mon. $P2_1/m$	a=13.15Å β=90°37' b=7.19Å Z=4 c=5.72Å			Am.Min.,1965,50,520-521 (Abs.);RRW,637;Str.Tab.,296; Pov.,600;Hölzel,136.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ULEXITE	$NaCaB_5O_6(OH)_6$ $.5H_2O$	$Ca^{[9]}Na^{o}(H_2O)_5$ $\{g\}[B_3{}^{t}B_2{}^{tr}O_6(OH)_6]$	Tric. $P\bar{1}$	a=8.816Å α=90.36° b=12.870Å β=109.05° c=6.678Å γ=104.98° Z=2	Na(2i)Ca(2i) $B_{I\text{-}V}(2i)O_{I\text{-}VI}(2i)$...		Am.Min.,1978,63,160-171;Am. Min,1959,44,712-719;RRW, 637;Pov.,484-485;Str.Tab., 259.
URALOLITE	$Ca_2Be_4(PO_4)_3(OH)_3$ $.5H_2O$	$Ca_2{}^{[7]}(H_2O)_5$ $\{2\infty\}[Be_4{}^{t}(P^{t}O_4)_3$ $(OH)_3]$	Mon. $P2_1/n$	a=6.550Å β=101.64° b=16.005Å Z=4 c=15.969Å	$Ca_{I\text{-}II}(4e)$ $Be_{I\text{-}IV}(4e)$ $P_{I\text{-}III}(4e)$ $O_{I\text{-}XII}(4e)$...		Eur.J.Min.,1994,6,887-896; RRW,639;Pov.,553;Str.Tab., 340;Hölzel,167.
URAMPHITE	$NH_4(UO_2)(PO_4)$ $.3H_2O$		Tet. ?				Am.Min.,1959,44,464(Abs.); RRW,640;Pov.,556;Str.Tab., 351;Hölzel,181.
URANOCIRCITE	$Ba(UO_2)_2(PO_4)_2$ $.10H_2O$	$(H_2O)_{10}[Ba^{[8]}$ $\{2\infty\}[[U^{[2+4]}O_2P^{t}O_4]_2]$	Tet. I4/mmm	a=7.01Å Z=2 c=20.46Å		$(H_2O)_{10}[Ca^{(8)}$ $\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ AUTUNITE	Str.Tab.,351;Pov.,556;RRW, 640;Min.Abs.,1966,17,695;LF, 245.
URANOPILITE	$(UO_2)_6SO_4(OH)_{10}$ $.12H_2O$		Mon. ?	a=? β=? b=? Z=? c=8.91Å			RRW,641;Pov.,602-603;Str. Tab.,298;Hölzel,138.
URANOSPINITE	$Ca(UO_2)_2(AsO_4)_2$ $.10H_2O$	$(H_2O)_{10}[[Ca]^{[8]}\{2\infty\}$ $[U^{[2+4]}O_2As^{t}O_4]_2]$	Tet. I4/mmm	a=7.15Å Z=2 c=20.61Å		$(H_2O)_{10}[Ca^{(8)}$ $\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ AUTUNITE	Str.Tab.,352;RRW,642;Pov., 522;Hölzel,179;LF,245.
USHKOVITE	$MgFe_2(PO_4)_2(OH)_2$. $.8H_2O$	$Mg^{o}Fe_2{}^{o}P_2{}^{t}$ $[O_8(OH)_2(H_2O)_8]$ (=Laueite)	Tric. $P\bar{1}$	a=5.20Å α=108°36' b=10.70Å β=106°56' c=7.14Å γ=72°43' Z=1			Am.Min.,1984,69,212-213 (Abs.);K/B,157;Hölzel,170.
VAUXITE	$FeAl_2(PO_4)_2(OH)_2$ $.6H_2O$	$Fe^{o}Al_2{}^{o}P_2{}^{t}$ $[O_8(OH)_2(H_2O)_6]$ (≈Laueite)	Tric. $P\bar{1}$	a=9.13Å α=98.3° b=11.59Å β=92.0° c=6.14Å γ=108.4° Z=2	$Fe_I(1a)Fe_{II}(1c)$ $Al_I(2i)Al_{II}(1g)$ $Al_{III}(1e)$...		Am.Min.,1968,53,1025-1028; RRW,650;Pov.,560-561;Str. Tab.,341;K/B,155;Hölzel,171.
VERMICULITE	$Mg_{0.7}(Mg,Fe,Al)_6$ $(Si,Al)_8O_{22}(OH)_2$ $.8H_2O$	$(H_2O)_8Mg_{0.7}{}^{o}$ $(Mg,Fe,Al)_6{}^{o}(OH)_2$ $\{2\infty\}[(Si,Al)_8{}^{t}O_{22}]^{(2.s)c}$	Mon. C2/c	a=5.349Å β=97°7' b=9.255Å Z=2? c=28.89Å	$Mg_{I\text{-}III}(4e)$ $Mg_{IV}(4a)$ $(Si,Al)_{I\text{-}II}(8f)$...	$(H_2O)_8Mg_{0.7}{}^{o}$ $(Mg,Fe,Al)_6{}^{o}(OH)_2$ $\{2\infty\}[(Si,Al)_8{}^{t}O_{22}]^{(2.s)c}$ VERMICULITE	Am.Min.,1966,51,1124-1143; LF,233;Pov.,446;Str.Tab.,447; Hölzel,232.
VERTUMNITE	$Ca_4Al_4Si_4O_6(OH)_{24}$. $.3H_2O$		Mon. $P2_1/m$	a=5.744Å β=119.72° b=5.766Å Z=1 c=25.12Å			SR,44A,316;Hölzel,192;Am. Min.,1977,62,1061(Abs.);Min. Abs.,81-1207.
VOLKONSKOITE	$Ca_{0.3}(Cr,Mg)_2$ $(Si,Al)_4O_{10}(OH)_2$ $.4H_2O$	$Ca_{0.3}{}^{o}(Cr,Mg)_2{}^{o}(OH)_2$ $(H_2O)_4\{2\infty\}[Si_4{}^{t}O_{10}]$	Mon. ?	a=5.16Å β=? b=8.94Å Z=? c=14.40Å		$(H_2O)_n(Al,Mg)_2{}^{o}$ $(OH)_2\{2\infty\}[Si_4{}^{t}O_{10}]^{(2.s)c}$ MONTMORILLONITE	Str.Tab.,445;Pov.,445-446; RRW,656;Am.Min.,1988,73, 934(Abs.);Hölzel,232.
VOLTAITE	$K_2Fe_8Al(SO_4)_{12}$ $.18H_2O$	$(H_2O)_6\{3\infty\}[K_2{}^{[12]}Fe_8{}^{o}$ $Al^{o}S_{12}{}^{t}O_{48}(H_2O)_{12}]$	Cub. Fd3c	a=27.254Å Z=16			SR,39A,314-315;Pov.,595;Str. Tab.,287;RRW,656;Hölzel,130.
WALLKILLDELLITE	$Ca_4Mn_6(AsO_4)_4$ $(OH)_8.18H_2O$		Hex. $P6_3/mmc$...	a=6.506Å Z=2 c=23.49Å			Am.Min.,1983,68,1029-1032; Hölzel,174.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
WARDITE	$NaAl_3(PO_4)_2(OH)_4.2H_2O$	$(H_2O)_2\{3\infty\}[Na^{[8]}Al_3^{[6]}P_2^tO_8(OH)_4]$	Tet. $P4_12_12$...	a=7.03Å Z=4 c=19.04Å	Na(4f)Al_I(8g) Al_{II}(4e)P(8g) O_{I-II}(8g)		Min.Mag.,1970,37,598-605; K/B,47-48;Pov.,551;Str.Tab., 347;RRW,662;Hölzel,173.
WEEKSITE	$K_2(UO_2)_2Si_6O_{15}.4H_2O$		Orth. Pnnb	a=14.26Å Z=16 b=35.88Å c=14.20Å	U(2a) Si(4e) O_{I-IV}(4e) O_V(8f) ...		Am.Min.,1960,45,39-52;Am. Min.,1981,66,610-625;Pov., 457;Str.Tab.,386;RRW,664.
WELOGANITE	$Na_2(Sr,Ca)_3Zr(CO_3)_6.3H_2O$	$(H_2O)_3Na_2^{[6/p]}(Sr,Ca)_3^{[10]}Zr^{[9]}\{g\}[C^{tr}O_3]_6$	Tric. P1	a=8.966Å α=102.72° b=8.980Å β=116.65° c=6.730Å γ=60.06° Z=1			SR,41A,295;Pov.,618;Str.Tab., 246;RRW,667;Hölzel,105.
WIGHTMANITE	$Mg_5O(BO_3)(OH)_5.2H_2O$	$Mg_5^o[(OH)_5(H_2O)_2O\{g\}[B^{tr}O_3]]^{*Ts*}$	Mon. I2/m	a=13.46Å β=91.60° b=3.102Å Z=4 c=18.17Å	Mg_{I-V}(4a) B(4a) O_{I-V}(4a) ...		Am.Min.,1974,59,985-1004; Am.Min.,1962,47,718-722;SR, 40A,222-224;Pov.,471;Str. Tab.,253.
WILCOXITE	$MgAl(SO_4)_2F.18H_2O$		Tric. P $\bar{1}$...	a=14.90Å α=117°26' b=6.65Å β=100°35' c=6.77Å γ=80°10' Z=1			Min.Mag.,1983,47,37-40.
WILLHENDERSONITE	$KCa(Al_3Si_3)O_{12}.5H_2O$	$(KCa\square_4)(H_2O)_5\{3\infty\}[Al_3^tSi_3^tO_{12}]$	Tric. P 1	a=9.23Å α=92.7° b=9.21Å β=92.4° c=9.52Å γ=90.1° Z=2		Dist.subs.deriv. $(Ca\square_5)(H_2O)_6\{3\infty\}[Al_2^tSi_4^tO_{12}]$ CHABAZITE	Am.Min.,1984,69,186-189; Hölzel,245:LF,287.
XANTHOXENITE	$Ca_4Fe_2(PO_4)_4(OH)_2.3H_2O$	$Ca_4^oFe_2^oP_4^t[O_{16}(OH)_2(H_2O)_3]$ (=Stewartite)	Tric. P 1	a=6.70Å α=92.1° b=8.85Å β=110.2° c=6.54Å γ=93.2° Z=1			Min.Mag.,1978,42,309-323; K/B,192;Pov.,550;Hölzel,175.
YAKHONTOVITE	$(Ca,Na,K)_{0.2}(Cu,Fe,Mg)_2Si_4O_{10}(OH)_2.3H_2O$		Mon. ?	a=5.26Å β~90° b=9.108Å Z=? c=14Å			Am.Min.,1991,76,668-669;Min. Abs.,88M/1097;Hölzel,232.
ZAKHAROVITE	$Na_4Mn_5Si_{10}O_{24}(OH)_6.6H_2O$		Trig. P31m...	a=14.58Å Z=9 c=37.71Å			Am.Min.,1983,68,1040;Hölzel, 247.
ZAPATALITE	$Cu_3Al_4(PO_4)_3(OH)_9.4H_2O$		Tet. ?	a=15.22Å Z=6 b=11.52Å			Min.Mag.,1972,38,541-544; K/B,161;Hölzel,172.
ZELLERITE	$Ca(UO_2)(CO_3)_2.5H_2O$		Orth. $Pmn2_1$...	a=11.220Å Z=4 b=19.252Å c=4.933Å			Am.Min.,1966,51,1567-1579; Pov.,625;Str.Tab.,249;RRW, 685;Hölzel,110.
ZEOPHYLLITE	$Ca_{13}Si_{10}O_{28}(OH)_2F_8.6H_2O$		Trig. R $\bar{3}$...	a=9.36 α_R=13.31Å c=36.48Å α=41°11' Z=3 Z_R=1	Ca_I(1a)Ca_{II-III}(6f) Si_{I-II}(2c) Si_{III}(6f)...		Acta Cryst.,1968,B28,2726-2732;Pov.,430;Str.Tab.,467; RRW,685;Hölzel,236;Min. Mag.,1983,47,397-400.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ZEUNERITE	$Cu(UO_2)_2(AsO_4)_2.16H_2O$	$(H_2O)_{16}[Cu^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$	Tet. I4/mmm	a=7.18Å Z=2 c=21.06Å		$(H_2O)_{10}[Ca^{(6)}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$ AUTUNITE	Str.Tab.,351;Pov.,521;RRW, 686;Encyc.Miner.Nam.,342; Hölzel,179;LF,245.
ZINCOBOTRYO-GEN	$(Zn,Mg,Mn)Fe(SO_4)_2(OH).7H_2O$	$(Zn,Mg,Mn)^oFe^oS_2^t[O_8(OH)(H_2O)_7]$ (=Botryogen)	Mon. $P2_1/n$	a=10.488Å β=100°50' b=17.819Å Z=4 c=7.185Å			Am.Min.,1964,49,1776-1777 (Abs.);RRW,688;Pov.,601;Str. Tab.,295.
ZINCOCOPIAPITE	$ZnFe_4(SO_4)_6(OH)_2.20H_2O$	$(H_2O)_6\{1\infty\}[Zn^oFe_4S_6^tO_{24}(OH)_2(H_2O)_8]\{g\}[Fe_o(H_2O_6)]$ (Subs.d.Copiapite)	Tric. P^-1	a=7.35Å α=93°50' b=18.16Å β=101°30' c=7.28Å γ=99°22' Z=1			Am.Min.,1964,49,1777(Abs.); Can.Min.,1985,23,53-56;Pov., 601;Str.Tab.,295;RRW,688.
ZINCOVOLTAITE	$K_2Zn_5Fe_4(SO_4)_{12}.18H_2O$	$\{3\infty\}[K_2^{[12]}Fe_4^oZn_5^oS_{12}^tO_{48}(H_2O)_{18}]$ (Subs.d.Voltaite)	Cub. Fd3c	a=27.180Å Z=16			Am.Min.,1990,75,244-245 (Abs.);Hölzel,suppl.
ZINC-ZIPPEITE	$Zn_2(UO_2)_6(SO_4)_3(OH)_{10}.16H_2O$		(Orth.?) ?	a=8.80Å Z=8 b=68.43Å c=14.55Å			Hölzel,138.
ZORITE	$Na_6Ti_5Si_{12}O_{34}(O,OH)_5.11H_2O$	$Na_6^oTi_5^{[5/6]}(H_2O)_{11}\{3\infty\}[Si_{12}^tO_{34}(O,OH)_5]$ (≈Zeolite)	Orth. Cmmm	a=23.241Å Z=1? b=7.238Å c=6.955Å	$(Ti,Nb)_I$(4e) Ti_{II}(4l) Si_I(8o) ...		Sov.Phys.Cryst.,1979,24,686-693;Am.Min.,1973,58,1113 (Abs.);SR,45A,396.

Table 238 $A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
AJOITE	$(K,Na)Cu_7AlSi_9O_{24}(OH)_6.3H_2O$		Tric. P1 ...	a=13.637Å α=107.16° b=14.507Å β=105.45° c=13.620Å γ=110.57° Z=3			Am.Min.,1981,66,201-203: Hölzel,223.
ANDERSONITE	$Na_2Ca(UO_2)(CO_3)_3.6H_2O$		Trig. $R\bar{3}m$	a=17.90Å a_R=13.11Å c=23.734Å α=86°56' Z=18 Z_R=6	U(18h) Ca(18h) Na_{I-II}(18h) O_{I-IV}(36i) O_{V-VII}(18h) ...		Acta Cryst.,1981,B37,1496-1500;Str.Tab.,249;SR,28,177-178;Pov.,619;RRW,22.
ARDEALITE	$Ca_2(HPO_4)(SO_4).4H_2O$	$Ca_2{}^{o}P^{t}S^{t}[HO_8(H_2O)_4]$ (≈Gypsum)	Mon. Cc.	a=5.721Å β=117.26° b=30.992Å Z=4 c=6.250Å	Ca_{I-II}(4a) P(4a) S(4a) O_{I-VIII}(4a) ...		Am.Min.,1978,63,520-527; Pov.,557;Str.Tab.,291;RRW, 32;Hölzel,125.
ARSENURANOSPATHITE	$HAl(UO_2)_4(AsO_4)_4.40H_2O$		Tet. $P4_2/n$	a=7.16Å Z=2 c=30.37Å			Min.Mag.,1978,42,117-128; Am.Min.,1979,64,465(Abs.); Hölzel,180.
ARSENURANYLITE	$Ca(UO_2)_4(AsO_4)_2(OH)_4.6H_2O$		Orth. Bmmb ...	a=15.40Å Z=6 b=17.40Å c=13.77Å			Pov.,524;Str.Tab.,355;RRW, 38;Am.Min.,1959,44,208(Abs.); Hölzel,181.
ATTAKOLITE	$(Ca,Mn,Fe)_3Al_6(PO_4)_5(SiO_4)_2.3H_2O$	$\{3\infty\}[(Ca,Mn,Fe)_3^{[8]}Al_6^{[6]}P_5^{t}S_2^{t}O_{28}(H_2O)_3]$	(Orth.) C2/m	a=17.188Å β=113.83° b=11.477Å Z=4 ? c=7.322Å	Ca(4g) Mn(4i) Al_{I-II}(8j) Si(4i) ...		Am.Min.,1992,77,1285-1291; Am.Min.,1966,51,534(Abs.); Pov.,544-545;Str.Tab.,324; RRW,41;Hölzel,176.
BANNISTERITE	$KCaMn_{21}(Si,Al)_{32}O_{76}(OH)_{16}.12H_2O$		Mon. A2/a	a=22.20Å β=94°20' b=16.32Å Z=2 c=24.70Å			Min.Mag.,1968,36,893-913; Hölzel,230;Am.Min.,1981,66, 1063-1067.
BARIO-ORTHOJOAQUINITE	$(Ba,Sr)_4Fe_2Ti_2O_2(SiO_3)_8.H_2O$		Orth. Ccmm ...	a=10.477Å Z=1? b=9.599Å c=22.59Å			Am.Min.,1982,67,809-816; Hölzel,206;Encyc.Miner.Nam., 31.
BERGENITE	$(Ba,Ca)_2(UO_2)_3(PO_4)_2(OH)_4.5.5H_2O$		Mon. $P2_1/c$	a=22.32Å β=93.0° b=17.19Å Z=18 c=20.63Å			Am.Min.,1981,66,1102(Abs.); K/B,162;Hölzel,182;Am.Min., 1960,45,909(Abs.);Str.Tab., 355.
BETA-URANOPHANE	$Ca(UO_2)_2(SiO_3OH)_2.5H_2O$	$Ca(H_2O)_5H_2\{2\infty\}[(UO_2)_2(Si^{t}O_4)_2]$	Mon. $P2_1/a$	a=13.966Å β=91.38° b=15.443Å Z=4 c=6.632Å	Ca(4e) U_{I-II}(4e) Si_{I-II}(4e) ...		Am.Min.,1986,71,1489-1493; RRW,67;Am.Min.,1981,66, 610-625.
BETPAKDALITE	$(H,K)_6Ca_4Fe_6As_4Mo_{16}O_{74}.28H_2O$		Mon. C2/m	a=19.441Å β=131.28° b=11.096Å Z=1 ? c=15.25Å			Am.Min.,1985,70,1333(Abs.); Hölzel,178;Pov.,570-571;Str. Tab.,303.
BIJVOETITE - (Y)	$(Y,Dy)_2(UO_2)_4(CO_3)_4(OH)_6.11H_2O$		Orth. C2ma ...	a=21.22Å Z=16 b=45.3Å c=13.38Å			Encyc.Miner.Nam.,39;Hölzel, 110;Am.Min.,1983,68,1248 (Abs.).

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
BUKOVSKÝITE	$Fe_2(AsO_4)(SO_4)(OH).7H_2O$		Tric. P $\bar{1}$ ...	a=10.722Å α=93.5° b=14.079Å β=115.96° c=10.284Å γ=90.27° Z=4			Min.Abs.,87M/2138;Hölzel, 169;Am.Min.,1969,54,991-992(Abs).
BURANGAITE	$(Na,Ca)_2Fe_2Al_{10}(PO_4)_8(O,OH)_{12}.4H_2O$		Mon. C2/c	a=25.09Å β=110.91° b=5.048Å Z=2 c=13.45Å			Am.Min.,1978,63,793(Abs.); Hölzel,174.
CACOXENITE	$Fe_{24}AlO_6(PO_4)_{17}(OH)_{12}.75H_2O$	$(H_2O)_{75}\{3\infty\}[Fe_{24}^{o}Al^{[5by]}O_6(P^tO_4)_{17}(OH)_{12}]$	Hex. $P6_3/m$	a=27.559Å Z=2 c=10.550Å			Am.Min.,1985,70,220(Abs.); K/B,28-29;Pov.,548-549;Str. Tab.,343;RRW,98.
CALCIOFERRITE	$Ca_4Mg(Fe,Al)_4(PO_4)_6(OH)_4.13H_2O$		? C2/c ?	?			Hölzel,175;Pov.,550;Str.Tab., 349;RRW,100-101;Encyc. Miner.Nam.,52;Min.Abs., 84M/1917;Am.Min.,1969,54, 993(Abs.).
CALCURMOLITE	$Ca(UO_2)_3(MoO_4)_3(OH)_2.11H_2O$		? ?	?			Am.Min.,1964,49,1152-1153 (Abs.);Pov.,572;Str.Tab.,303; RRW,102;Hölzel,141.
CANAVESITE	$Mg_2(HBO_3)(CO_3).5H_2O$		Mon. P2/m	a=23.49Å β=114.91° b=6.164Å Z=12 c=21.91Å			Hölzel,113;Encyc.Miner.Nam., 54;Can.Min.,1978,16,69-73.
CARBOBORITE	$Ca_2Mg(B(OH)_4)_2(CO_3)_2.4H_2O$		Mon. $P2_1/m$	a=11.32Å β=91°41' b=6.68Å Z=4 c=18.59Å			Encyc.Miner.Nam.,55;Pov., 475;Str.Tab.,256;Am.Min., 1965,50,262-263(Abs.).
CETINEITE	$K_{3.5}(Sb_2O_3)_3(SbS_3)(OH)_{0.5}.2H_2O$	$(H_2O)_2\{3\infty\}[K_{3.5}^{o}(Sb_2^{[3n]}O_3)_2Sb^{[3n]}S_3(OH)_{0.5}]$	Hex. $P6_3$	a=14.2513Å Z=2 c=5.900Å	K(6c) Na(2a) $1/2Sb_{I-II}$(2b) Sb_{III-IV}(6c) ...		Am.Min.,1988,73,398-404; Hölzel,47.
CHERNIKOVITE	$(H_3O)(UO_2)PO_4.3H_2O$		Tet. P4/nmm ?	a=7.020Å Z=2 c=9.043Å			Encyc.Miner.Nam.,62;Hölzel, 180;Min.Abs.,89/2282.
CHIAVENNITE	$CaBe_2MnSi_5O_{13}(OH)_2.2H_2O$	$Ca^{[8]}Mn^{[6]}(H_2O)_2\{3\infty\}[Si_5^tBe_2^t(OH)_2]$	Orth. Pnab	a=8.729Å Z=4 b=31.326Å c=4.903Å	Ca(4c) Mn(4a) Si_I(4c) Si_{II-III}(8d) Be(8d) ...		Euro.J.Min.,1995,7,1339-1340; Am.Min.,1983,68,623-627; Hölzel,222.
CHUDOBAITE	$(Mg,Zn)_5(AsO_4)_2(AsO_3OH)_2\ 10H_2O$		Tric. P $\bar{1}$	a=7.797Å α=80.5° b=10.485Å β=84.23° c=6.616Å γ=82.12° Z=1			Am.Min.,1989,74,676-684;Am. Min.,1960,45,1130(Abs.);Am. Min.,1977,62,599(Abs.);Pov., 516;Str.Tab.,338;RRW,131; Hölzel,162.
CHUKHROVITE – - (Y)	$Ca_3(Y,Ce)Al_2(SO_4)F_{13}.10H_2O$	$(H_2O)_{10}\{3\infty\}[Ca_3^{o}(Y,Ce)^{o}Al_2^{o}S^tO_4F_{13}]$	Cub. Fd3	a=16.710Å Z=8	Ca(32e) F_I(32e) F_{II}(96g) (Y,Ce)(8b) ...		Am.Min.,1981,66,392-397;Am. Min.,1960,45,1132-1133;Pov., 664;Str.Tab.,161;RRW,131.
CLINOUNGEMA-CHITE	$K_3Na_9Fe(SO_4)_6(OH)_3.9H_2O$		Mon. ?	? β=110°40'			Pov.,600;Str.Tab.,298;RRW, 137;Hölzel,136.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
COBALT- - ZIPPEITE	$Ca_2(UO_2)_6(SO_4)_3(OH)_{10}.16H_2O$		? ?	a=8.80Å Z=8 b=68.43Å c=14.55Å			Hölzel,138.
CREEDITE	$Ca_3Al_2SO_4(OH)_2F_8.2H_2O$	$(H_2O)_2\{3\infty\}[Ca_3^{[8]}Al_2^{o}S^{t}[O_4(OH)_2F_8]$	Mon. C2/c	a=14.03Å β=94°30' b=8.51Å Z=4 c=9.93Å	Ca_I(8f) Ca_{II}(4e) S(4e) Al(8f) F_{I-III}(8f) ...		SR,30A,378;Pov.,657;Str.Tab., 161;RRW,151.
CUPROSKLO-DOWSKITE	$Cu(UO_2)_2(SiO_3OH)_2.6H_2O$	$(H_2O)_6Cu^{[7by]}H_2\{2\infty\}[(UO_2)_2(Si^{t}O_4)_2]$	Tric. P $\bar{1}$	a=7.052Å α=109.23° b=9.267Å β=89.84° c=6.655Å γ=110.01° Z=1	U(2i) Cu(1e) Si(2i) O_{I-IX}(2i)		Am.Min.,1975,60,448-453;Am. Min.,1981,66,610-625;SR,41A, 380-381;Pov.,455;SR,28,277-278;Str.Tab.,385; Hölzel,195.
DELHAYELITE	$(Na,K)_{10}Ca_5Al_6Si_{32}O_{80}Cl_6.18H_2O$	$(H_2O)_{18}(Na,K)_{10}^{[8]}\{3\infty\}[Ca_5^{[6]}Al_6^{t}Si_{32}^{t}O_{80}Cl_6]$ (≈Macdonaldite)	Orth. Pmn2_1 ...	a=6.53Å Z=1 b=24.65Å c=7.04Å			Min.Mag.,1959,32,6-9;Pov., 434;Str.Tab.,469;RRW,167; Hölzel,237.
DEWINDTITE	$Pb_2(UO_2)_4(PO_4)_3(OH)_3.7H_2O$	$Pb_2^{[8]}(H_2O)_7\{2\infty\}[(U^{[7by/8by]}O_2)_4(OH)_3(P^{t}O_4)_3]$ (≈Dumontite)	Orth. Bmmb	a=16.031Å Z=6 b=17.264Å c=13.605Å			Eur.J.Min.,1990,2,399-405; Pov.,559;Str.Tab.,355;RRW, 170;Hölzel,181;Am.Min.,1954, 39,444-447.
DIADOCHITE	$Fe_2(PO_4)(SO_4)(OH)..5H_2O$		Tric. P1 ...	a=9.61Å α=98°49' b=9.77Å β=108°1' c=7.36Å γ=63°59' Z=2			Hölzel,169;RRW,171;K/B,176.
DONNAYITE - (Y)	$NaSr_3CaY(CO_3)_6.3H_2O$		Tric. P $\bar{1}$	a=9.000Å α=102°77' b=8.999Å β=116°28' c=6.793Å γ=59°99' Z=1			Am.Min.,1979,64,653-654; Hölzel,105;Can.Min.,1978,16, 335-340.
DUHAMELITE	$Cu_4Pb_2Bi(VO_4)_4(OH)_3.8H_2O$		Orth. ?	a=7.49Å Z=1 b=9.66Å c=5.87Å			Min.Mag.,1981,44,151-152; Am.Min.,1982,67,414(Abs.); Min. Abs.,81-3236;Hölzel,177.
DUMONTITE	$Pb_2(UO_2)_3(PO_4)_2O_2.5H_2O$	$Pb_2(H_2O)_5\{2\infty\}[(UO_2)_3O_2(P^{t}O_4)_2]$ (≈Dewindtite)	Mon. $P2_1/a$	a=8.16Å β=110° b=16.73Å Z=2 c=7.02Å	U_I(2e) U_{II}(4f) Pb(4f) P(4f) ...		SR,27,583-584;K/B,162;Bull. Min.,1958,81,63-65;Am.Min., 1989,74,1403(Abs.);Pov.,559.
EAKERITE	$Ca_2SnAl_2Si_6O_{18}(OH)_2.2H_2O$	$Ca_2^{[8]}Sn^{[6]}(H_2O)_2\{2\infty\}[Al^{t}Si_3^{t}O_9(OH)]_2$ (≈Ussingite)	Mon. $P2_1/m$	a=15.892Å β=101.34° b=7.721Å Z=2 c=7.438Å	Sn(2a) Ca(4e) Al(4e) Si_{I-III}(4e) O_{I-XI}(4e)		Am.Min.,1976,61,956-962;SR, 42A,403-404;RRW,184;Hölzel, 207.
EPISTOLITE	$Na_5TiNb_2(Si_2O_7)_2(O,F)_4.5H_2O$		Tric. P1	a=5.41Å α=103°3' b=7.08Å β=96°3' c=12.07Å γ=88°36' Z=2			Pov.,454;Str.Tab.,395;RRW, 192;Hölzel,201;Am.Min.,1984, 69,569.
FAUJASITE	$Na_{20}Ca_{12}Mg_8(Al_{60}Si_{132})O_{384}.235H_2O$	$Na_{20}Ca_{12}Mg_8(H_2O)_{235}\{3\infty\}[(Al_{60}Si_{132})^{t}O_{384}]$ (≈Sodalite,Zeolite)	Cub. Fd3m	a=24.74Å Z=1	(Si,Al)(192i) (Na,Ca)(32e) O_{I-IV}(96g) O_{V-VI}(32e)		Am.Min.,1964,49,967-704;SR, 32A,484-488;Pov.,353;Str. Tab.,493;RRW,205;Hölzel,244.

Table 241 $A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
FERRARISITE	$Ca_5(AsO_3OH)_2(AsO_4)_2.9H_2O$	$(H_2O)_9Ca_4^{o}$ $\{2\infty\}[Ca^{[7]}As_4^{t}O_{14}(OH)_2]$	Tric. P $\bar{1}$	a=8.249Å α=106.16° b=6.722Å β=92.94° c=11.198Å γ=99.20° Z=1			Am.Min.,1981,66,637(Abs.); SR,46A,337-338;Hölzel,166.
FERRIERITE (monoclinic)	$KNa_3Mg(Al_5Si_{31})O_{72}.18H_2O$	$KNa_3Mg^{o}(H_2O)_{18}$ $\{3\infty\}[(Al_5Si_{31})^{t}O_{72}]$ (≈Mordenite,Zeolite)	Mon. $P2_1/n$	a=18.886Å β=90.0° b=14.182Å Z=1 c=7.470Å	$(Al,Si)_{I\text{-}V}$(4e) …		Am.Min.,1985,70,619-623;Zeit. Krist.,1987,178,249-256;Pov., 355;Str.Tab.,488;RRW,209.
FURONGITE	$Al_{13}(UO_2)_7(PO_4)_{13}(OH)_{14}.58H_2O$		Tric. P1 …	a=19.271Å α=67.62° b=14.173Å β=115.45° c=12.136Å γ=94.58° Z=1			Am.Min.,1988,73,198(Abs.); K/B,162;Acta Cryst.,1981,A37, C-186,(Abs.);Hölzel,183;K/B, 162.
GEIGERITE	$Mn_5(AsO_4)_2(AsO_3OH)_2.10H_2O$	$Mn_5^{o}As_4^{t}$ $[O_{14}(OH)_2(H_2O)_{10}]$ (≈Chudobaite)	Tric. P $\bar{1}$	a=7.944Å α=80.97° b=10.691Å β=84.20° c=6.770Å γ=81.85° Z=1	$As_{I\text{-}II}$(2i) Mn_I(1a) $Mn_{II\text{-}III}$(2i) …		Am.Min.,1989,74,676-684; Hölzel,162.
GRIMSELITE	$K_3Na(UO_2)(CO_3)_3.H_2O$		Hex. P $\bar{6}$2c	a=9.30Å Z=2 c=8.26Å			Am.Min.,1973,58,139(Abs.); RRW,248;Hölzel,109.
GRISCHUNITE	$NaCa_2Mn_5Fe(AsO_4)_6.2H_2O$	$(H_2O)_2Ca_2^{[8]}\{3\infty\}[Na^{o}Mn_5^{o}Fe^{o}As_6^{t}O_{24}]$	Orth. Pcab	a=12.855Å Z=4 b=13.487Å c=12.047Å	Na(4a) Ca(8c) $As_{I\text{-}III}$(8c) …		Am.Min.,1987,72,1225-1229; Am.Min.,1986,71,227-228 (Abs.);Hölzel,164.
GUERINITE	$Ca_5(AsO_3OH)_2(AsO_4)_2.9H_2O$	$(H_2O)_9Ca_4^{o}$ $\{2\infty\}[Ca^{[7]}As_4^{t}O_{14}(OH)_2]$ (≈Ferrarisite)	Mon. $P2_1/n$	a=17.62Å β=90.6° b=6.734Å Z=5 c=23.47Å	$Ca_{I\text{-}VI}$(4e) $As_{I\text{-}V}$(4e) $O_{I\text{-}XX}$(4e) …		Acta Cryst.,1974,B30,1789-1794;Hölzel,166.
GUILLEMINITE	$Ba(UO_2)_3(SeO_3)_2(OH)_4.3H_2O$	$(H_2O)_3Ba^{[10]}$ $\{2\infty\}[U_3^{[7/8]}(Se^{tr}O_3)_2O_8]$ (≈Phosphuranylite)	Orth. $P2_1nm$	a=7.084Å Z=2 b=7.293Å c=16.881Å	Ba(2a) O_I(2a) O_{II}(4b) Se(4b) …		Can.Min.,1995,33,1103-1109; Am.Min.,1965,50,2103(Abs.); Pov.,567;Str.Tab.,229.
GYROLITE	$NaCa_{16}AlSi_{24}O_{60}(OH)_8.14H_2O$	$\{2\infty\}[Na^{o}Ca_{16}^{o}(H_2O)_{14}]$ $\{2\infty\}[Al^{t}Si_{24}^{t}O_{60}(OH)_8]$ (≈Reyerite)	Tric. P $\bar{1}$	a=9.74Å α=95.7° b=9.74Å β=91.5° c=22.40Å γ=120.0° Z=1	$Ca_{I\text{-}VII}$(2i) $Si_{I\text{-}XII}$(2i)		Min.Mag.,1988,52,377-387; RRW,253;Pov.,434;Str.Tab., 467;Hölzel,236.
HOTSONITE	$Al_{11}(SO_4)_3(PO_4)_2(OH)_{21}.16H_2O$		Tric. ?	a=11.23Å α=112°32' b=11.66Å β=107°32' c=10.55Å γ=64°27' Z=?			Am.Min.,1984,69,979-983; K/B,176;Hölzel,124.
HÜGELITE	$Pb_2(UO_2)_3(AsO_4)_2(OH)_4.3H_2O$		Mon. ?	? β=119°48'			Str.Tab.,356;Pov.,524;Hölzel, 182.
HURÉAULITE	$Mn_5(PO_3OH)_2(PO_4)_2.4H_2O$	$Mn_5^{o}P_4^{t}$ $[O_{14}(OH)_2(H_2O)_4]$	Mon. C2/c	a=17.594Å β=96.67° b=9.086Å Z=4 c=9.404Å	Mn_I(4e) $Mn_{II\text{-}III}$(8f) $P_{I\text{-}II}$(8f) …		Am.Min.,1973,58,302-307;K/B, 130-131;SR,39A,287;Pov.,547 -548;Str.Tab.,330;RRW,285.

Table 242 $A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
HYDRODEL-HAYELITE	$KCa_2(Si_7Al)O_{17}(OH)_2.6H_2O$		Orth. $Pnm2_1$	a=6.648Å Z=2 b=23.846Å c=7.073Å			Am.Min.,1987,72,1024(Abs.); Hölzel,237.
JOHANNITE	$Cu(UO_2)_2(SO_4)_2(OH)_2.8H_2O$		Tric. P1	a=8.903Å α=109.87° b=9.499Å β=112.01° c=6.812Å γ=100.40° Z=1			Min.Abs.,84M/3844;Hölzel, 138;SR,21,342;Pov.,604;Str. Tab.,299;RRW,311.
JOHNWALKITE	$K(Mn,Fe)_2(Nb,Ta)O_2(PO_4)_2.2(H_2O,OH)$		Orth. $Pb2_1m$	a=7.516Å Z=? b=10.023Å c=6.502Å			Am.Min.,1987,72,223;Hölzel, 144;K/B,158.
JONESITE	$(K,Na)_2Ba_4Ti_4Al_2Si_{10}O_{36}.6H_2O$		Orth. $B22_12$	a=13.730Å Z=8 ? b=25.904Å c=10.608Å			Encyc.Miner.Nam.,149;Hölzel, 205;Min.Record,1977,8,453-456.
JUNGITE	$Ca_2Zn_4Fe_8(PO_4)_9(OH)_9.16H_2O$		Orth. Pcmm ...	a=11.98Å Z=2 b=20.37Å c=9.95Å			Am.Min.,1980,65,1067(Abs.); Hölzel,176;K/B,161.
KAINOSITE – (Y)	$Ca_2(Y,Ce)_2(SiO_3)_4(CO_3).H_2O$	$(H_2O)\{3\infty\}[Ca_2^{[8]}(Y,Ce)_2^{[8]}[g]\{Si_4^tO_{12}]C^{tr}O_3]$	Orth. Pmnb	a=12.93Å Z=4 b=14.30Å c=6.73Å	Ca(8d) Si_{I-II}(8d) (Y,Ce)(8d) C(4c) ...		Sov.Phys.Cryst.,1967,11,485-491;SR,31A,229-230;Pov.,372; Str.Tab.,405;Can.Min.,1964,8, 1-10
KALIBORITE	$HKMg_2B_{12}O_{16}(OH)_{10}.4H_2O$	$(H_2O)_4\{3\infty\}[K^{[8]}Mg_2^o[B_2^tB_4^{tr}O_8(OH)_5]_2]$	Mon. C2/c	a=18.53Å β=100.13° b=8.43Å Z=4 c=14.665Å	B_{I-VI}(8f) O_{I-VIII}(8f) K(4e) Mg(8f) ...		SR,31A,172-173;Pov.,485-486;Str.Tab.,262;RRW,316; Am.Min.,1965,50,1079-1083.
KAMOTOITE – (Y)	$Y_2O_4(UO_2)_4(CO_3)_3.14H_2O$		Mon. $P2_1/a$	a=21.22Å β=115.3° b=12.93Å Z=4 c=12.39Å			Bull.Min.,1986,109,643-647; Am.Min.,1988,73,191(Abs.); Hölzel,110.
KECKITE	$(Ca,Mg)(Mn,Zn)_2Fe_3(PO_4)_4(OH)_3.2H_2O$		Mon. $P2_1/a$	a=15.02Å β=110°30' b=7.19Å Z=2 c=19.74Å			Am.Min.,1979,64,1330-1331 (Abs.); K/B,156,Hölzel,177.
KINGSMOUNTITE	$(Ca,Mn)_4FeAl_4(PO_4)_6(OH)_4.12H_2O$		Mon. C2	a=10.029Å β=91.16° b=24.46Å Z=2 c=6.258Å			Can.Min.,1979,17,579-582; K/B,153;Hölzel,176.
KRIBERGITE	$Al_5(PO_4)_3(SO_4)(OH)_4.4H_2O$	$Al_5^oP_3^tS^t[O_{16}(OH)_4(H_2O)_4]$ (≈Hotsonite)	Tric. ?	a=18.126Å α=70°29' b=13.519Å β=117°52' c=7.500Å γ=136°34' Z=2			Min.Mag.,1989,53,385-386; Pov.,744,549;Str.Tab.,543; RRW, 333;Hölzel,169.
LAPLANDITE – - (Ce)	$Na_4CeTiPSi_7O_{22}.5H_2O$		Orth. Pmmm	a=7.27Å Z=4 b=14.38Å c=22.25Å			Am.Min.,1975,60,487(Abs.); Hölzel,224.
LAVENDULAN	$NaCaCu_5(AsO_4)_4Cl.5H_2O$		Orth. ?	a=9.73Å Z=8 b=41.0Å c=9.85Å			Pov.,518;Str.Tab.,349M;RRW, 347;Hölzel,174.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
LEIFITE	$Na_6Be_2Al_2Si_{16}O_{39}(OH)_2.1.5H_2O$	$Na_6^{[7]}(OH)_2(H_2O)_{1.5}\{3\infty\}[Be_2{}^tSi_{16}{}^tAl_2O_{39}]$	Trig. P 3m1	a=14.352Å Z=1 c=4.852Å	Na(6i) Be(2d) Si_I(6h) Si_{II}(6g) Si_{III}(6i) ...		Acta Cryst.,1974,B30,396-401; SR,40A,285;Pov.,350;Str.Tab., 483;RRW,350-351.
LOUDOUNITE	$NaCa_5Zr_4Si_{16}O_{40}(OH)_{11}.8H_2O$		? ?	?			Can.Min.,1983,21,37-40; Hölzel,230;Am.Min.,1983,68, 1039(Abs.).
LUN'OKITE	$(Mg,Fe)(Mn,Ca)Al(PO_4)_2(OH).4H_2O$	$(Mg,Fe)^o(Mn,Ca)^oAl^oP_2{}^t[O_8(OH)(H_2O)_4]$ (=Segelerite)	Orth. Pbca	a=14.95Å Z=8 b=18.71Å c=6.96Å			Am.Min.,1984,69,210-211 (Abs.);K/B,153;Hölzel,176.
MAGNESIUM-ZIPPEITE	$Mg(UO_2)_6(SO_4)_3(OH)_{10}.16H_2O$		? ?	a=8.80Å Z=8 b=68.43Å c=14.55Å			Hölzel,138.
MARTHOZITE	$Cu(UO_2)_3(SeO_3)_3(OH)_2.7H_2O$		Orth. Pnma ...	a=16.40Å Z=4 b=17.20Å c=6.98Å			Bull.Min.,1969,92,278-283;Am. Min.,1970,55,533(Abs.); Hölzel,94;RRW,384;Pov.,567.
MCKELVEYITE – (Y)	$NaBa_3(Ca,U)Y(CO_3)_6.3H_2O$		Tric. P $\bar{3}$	a=9.174Å Z=3 c=19.154Å			Am.Min.,1965,50,593-612; Pov.,618;Str.Tab.,246;Hölzel, 105;RRW,388,370-371.
METAVANMEER-SSCHEITE	$U(UO_2)_3(PO_4)_2(OH)_6.2H_2O$		Orth. Fddd	a=34.18Å Z=32 b=33.88Å c=14.074Å			Hölzel,181;Am.Min.,1982,67, 1077(Abs.).
METAVANURALI-TE	$Al(UO_2)_2(VO_4)_2(OH).8H_2O$		Tric. P 1 ...	a=10.46Å α=75°53' b=8.44Å β=102°50' c=10.43Å γ=90° Z=2			Bull.Min.,1970,93,242-248;Am. Min.,1971,56,637(Abs.); Hölzel,183;Pov.,503;RRW,402.
METAVOLTINE	$K_2Na_6Fe_7O_2(SO_4)_{12}.18H_2O$	$(H_2O)_{18}\{3\infty\}[K_2{}^{[9]}Na_6{}^oFe_7{}^oS_{12}{}^tO_{50}]$	Trig. P3	a=9.575Å Z=1 c=18.17Å			SR,42A,374;Min.Abs.,77/4074; Min.,Mag.,1977,41,371-374; Pov.,600;Str.Tab.,297;RRW, 403.
MILLISITE	$(Na,K)CaAl_6(PO_4)_4(OH)_9.3H_2O$		Tet. $P4_12_12$?	a=7.00Å Z=4 ? c=19.07Å			Am.Min.,1960,45,547-561;Str. Tab.,347;K/B,153;Pov.,551.
MOLURANITE	$H_4U(UO_2)_3(MoO_4)_7.18H_2O$		Amorph.	-			Am.Min.,1960,45,257(Abs.); Hölzel, 141.
MONTGOMERYI-TE	$Ca_4MgAl_4(PO_4)_6(OH)_4.12H_2O$	$(H_2O)_{12}Ca_4{}^{[8]}\{1\infty\}[Mg^oAl_4{}^oP_6{}^tO_{24}(OH)_4]$ (=Calcioferrite)	Mon. C2/c	a=10.023Å β=91.55° b=24.121Å Z=2 c=6.243Å	Ca_{I-II}(4e) Al_I(4c) Al_{II}(4c) P_I(4e) P_{II}(8f) ...		Am.Min.,1974,59,843-850;Am. Min.,1976,61,12-14;Pov.,550; Str.Tab.,347;K/B,74-75:SR, 40A,243.
MORDENITE	$K_{2.8}Na_{1.5}Ca_2(Al_9Si_{39})O_{96}.29H_2O$	$K_{2.8}Na_{1.5}Ca_2(H_2O)_{29}\{3\infty\}[Al_9{}^tSi_{39}{}^tO_{96}]$ (Zeolite)	Orth. $Cmc2_1$	a=18.094Å Z=1 b=20.516Å c=7.524Å	$(Al,Si)_{I-VI}$(8b) O_{I-VI}(8b) ...		Zeit.Krist.,1986,175,249-256; SR,44A,311;Pov.,358;Str.Tab., 488;LF,397;Hölzel,245.
MOREAUITE	$Al_3(UO_2)(PO_4)_3(OH)_2.13H_2O$		Mon. $P2_1/c$	a=23.41Å β=92.0° b=21.44Å Z=16 c=18.34Å			Am.Min.,1985,70,1330-1331 (Abs.);K/B,162;Hölzel,182.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MOTUKOREAITE	$(Mg_6Al_3(OH)_{18})$ $(Na_{0.6}(SO_4,CO_3)_2).$ $12H_2O$		Trig. R 3m	a=9.172Å Z=3 c=33.51Å	Al_I(3b) Al_{II}(6c) Mg(18g) Na(3a) S(3c) ...		SR,53A,182;Am.Min.,1987,72, 1028(Abs.);Min.Mag.,1977,41, 389-390;Hölzel,134.
MUNDITE	$Al(UO_2)_3(PO_4)_2$ $(OH)_3.5.5H_2O$		Orth. $P2_1cn$ ...	a=17.08Å Z=16 b=30.98Å c=13.76Å			Am.Min.,1982,67,624(Abs.); K/B,162;Hölzel,181.
NAKAURIITE	$Cu_8(SO_4)_4(CO_3)$ $(OH)_6.48H_2O$		Orth. ?	a=14.585Å Z=2 b=11.47Å c=16.22Å			Am.Min.,1977,62,594(Abs.); Hölzel,135.
NICKEL-ZIPPEITE	$Ni_2(UO_2)_6(SO_4)_3$ $(OH)_{10}.16H_2O$		? ?	a=8.80Å Z=8 b=68.43Å c=14.55Å			Hölzel,138.
NOSEAN	$Na_8(Si_6Al_6)O_{24}$ $(SO_4).H_2O$	$Na_8S^tO_4(H_2O)$ $\{3\infty\}[Si_6^tAl_6^tO_{24}]$ (≈Sodalite)	Cub. P $\bar{4}$3n	a=9.05Å Z=1	Al(6d) Si(6e) 0.49S (2a) ...		Can.Min.,1989,27,165-172; RRW,443;Hölzel,241;Pov.,350; Str.Tab.,483;SR,30A,432.
OBOYERITE	$H_6Pb_6(TeO_3)_3$ $(TeO_6)_2.2H_2O$		Tric. P $\bar{1}$ ...	a=12.249Å α=116.45° b=15.113Å β=98.58° c=6.868Å Z=2 γ=85.82°			Am.Min.,1981,66,220(Abs.); Min.Mag.,1979,43,453-457; Hölzel,94.
OFFRÉTITE	$KCaMg(Al_5Si_{13})O_{36}.$ $15H_2O$	$K^{[8]}Ca^{[6]}Mg^t(H_2O)_{15}$ $\{3\infty\}[Al_5^tSi_{13}^tO_{36}]$ (Zeolite)	Hex. P $\bar{6}$m2	a=13.291Å Z=1 c=7.582Å	Mg(1c) K(1b) Ca_I(2i) Ca_{II}(2g) (v.occ.)Si_I(12o) Si_{II}(6m) ...		Acta Cryst.,1972,B28,825-834; Pov.,358;Str.Tab.,492;RRW, 445;Hölzel,244;Am.Min.,1976, 61,853-863;Sr,42A,454.
OLMSTEADITE	$KFe_2(Nb,Ta)O_2$ $(PO_4)_2.2H_2O$	$(H_2O)_2K^{[8]}\{3\infty\}[Fe_2^o$ $(Nb,Ta)^oP_2^tO_{10}]$ (≈Montgomeryite)	Orth. $Pb2_1m$	a=7.512Å Z=2 b=10.000Å c=6.492Å	K(2b) Na(2a) Fe(4c) P_I(2b) P_{II}(2a) ...		Am.Min.,1976,61,5-11;K/B,31-32;SR,42A,343-344.
OVERITE	$CaMgAl(PO_4)_2$ $(OH).4H_2O$	$Ca^o(H_2O)_4\{2\infty\}[Mg^oAl^o$ $P_2^tO_8(OH)]$ (≈Segelerite)	Orth. Pbca	a=14.723Å Z=8 b=18.746Å c=7.107Å	Mg(8c) P_{I-II}(8c) Ca(8c) Al(8c) ...		Am.Min.,1977,62,692-702;Am. Min.,1974,59,48-59;SR,43A, 252;Pov.,550;Str.Tab.,347.
PARNAUITE	$Cu_9(AsO_4)_2(SO_4)$ $(OH)_{10}.7H_2O$		Orth. $P2_122$	a=14.98Å Z=2 b=14.223Å c=6.018Å			Am.Min.,1978,63,704-708; Hölzel,168;Encyc.Miner.Nam., 232.
PERETAITE	$CaSb_4O_4(SO_4)_2$ $(OH)_2.2H_2O$	$\{2\infty\}[Sb_2^{[5by]}Sb_2^tO_4$ $(OH)_2\{1\infty\}[Ca^{8ap}S_2^tO_8$ $(H_2O)_2]$	Mon. C2/c	a=24.665Å β=95.98° b=5.6006Å Z=4 c=10.185Å	Sb_{I-II}(8f) Ca(4e) S(8f) ...		Am.Min.,1980,65,940-946,936-939;Hölzel,123;Zeit.Krist., 1998,213,141-150.
PERLIALITE	$K_9Na(CaSr)$ $(Al_{12}Si_{24})O_{72}.15H_2O$		Hex. P6/mmm	a=18.49Å Z=1 c=7.51Å			Am.Min.,1985,70,1331(Abs.); Hölzel,244.
PHOSPHOFIBRITE	$KCuFe_{15}(PO_4)_{12}$ $(OH)_{12}.12H_2O$		Orth. Pbmn ...	a=14.40Å Z=2 b=18.76Å c=10.40Å			Am.Min.,1984,69,1192(Abs.); Hölzel,181.
PHOSPHURANYLITE	$Ca(UO_2)_3(PO_4)_2$ $(OH)_2.6H_2O$	$Ca(H_2O)_6\{2\infty\}[(UO_2)_3$ $(OH)_2(P^tO_4)_2]$ (≈Dumontite)	Orth. Cmcm	a=15.778Å Z=8 ? b=13.702Å c=17.253Å	U_I(16h)U_{II}(8g) U_{III}(4b) Ca(f) P(16h) ...		Acta Cryst.,1991,B47,439-446; Str.Tab.,355;RRW,478;Pov., 559,K/B,162,Hölzel,181;Eur.J. Min.,1991,3,69-77.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
PHURALUMITE	$Al_2(UO_2)_3(PO_4)_2(OH)_6.10H_2O$	$Al_2^{o}(OH)_4(H_2O)_{10}\{2\infty\}[(P^tO_4)_2(UO_2)_3(OH)_2]$	Mon. $P2_1/a$	a=13.836Å β=112.44° b=20.918Å Z=4 c=9.428Å	U_{I-III}(4e) Al_{I-II}(4e) P_{I-II}(4e) ...		Acta Cryst.,1979,B35,1880-1882;Am.Min.,1980,65,208 (Abs.);SR,45A,313;K/B,161; Hölzel,182.
PHURCALITE	$Ca_2(UO_2)_3(PO_4)_2(OH)_4.4H_2O$	$Ca_2^{[7]}(OH)_2(H_2O)_4\{2\infty\}[(P^tO_4)_2(UO_2)_3(OH)_2]$ (≈Phuralumite)	Orth. Pbca	a=17.426Å Z=8 b=16.062Å c=13.592Å	Ca_{I-II}(8c) P_{I-II}(8c) U_{I-III}(8c) ...		Acta Cryst.,1979,B34,1677-1679;Am.Min.,1979,64,243; Am.Min.,1978,63,1283(Abs.); Can.Min.,1991,29,95-105;SR, 44A,255.
PSEUDOBOLÉITE	$28PbCl_2.2AgCl.24Cu(OH)_2.14H_2O$ (?)		Tet. I 4/mmm	a=15.4Å Z=2 c=31.2Å			Encyc.Miner.Nam.,246;Pov., 649-650;Str.Tab.,166;RRW, 494; Hölzel,57.
p-VEATCHITE	$(Sr,Ca)_2(B_5O_8(OH))_2)B(OH)_3.H_2O$	$(Sr,Ca)_2^{[10/11]}B(H_2O)(OH)_3\{2\infty\}[B_2^tB_3^{tr}O_8(OH)]_2$	Mon. $P2_1$	a=6.70Å β=119°15' b=20.80Å Z=4 c=6.60Å	Sr_I(4f) Sr_{II}(4f) B_{I-XI}(4f) ...		Sov.Phys.Cryst.,1971,16,75-81;SR,37A,274;Am.Min.,1960, 45,1221-1229;Pov.,489.
RANKACHITE	$CaFeV_4O_4(WO_4)_8.12H_2O$		Orth. Pmmm	a=8.17Å Z=2 b=42.02Å c=5.45Å			Am.Min.,1985,70,876(Abs.); Hölzel,81.
RENARDITE	$Pb(UO_2)_4(PO_4)_2(OH)_4.7H_2O$		Orth. Bmmb	a=16.01Å Z=6 b=17.5Å c=13.7Å			RRW,514;Pov.,559;Str.Tab., 355;K/B,162;Hölzel,181.
REYERITE	$(Na,K)_2Ca_{14}Al_2Si_{22}O_{58}(OH)_8.6H_2O$	$(Na,K)_2Ca_{14}^{o}(OH)_8(H_2O)_6\{2\infty\}[Si_{14}^tAl_2^tO_{38}]\{2\infty\}[Si_8^tO_{20}]$	Trig. P $\bar{3}$	a=9.765Å Z=1 c=19.067Å	Ca_I(2d) Ca_{II-III}(6g) Si_{I-II}(2d) Si_{III-V}(6g) ...		Min.Mag.,1988,52,247-256; Am.Min.,1973,58,517-522; Pov.,434-435;Str.Tab.,467; RRW,515.
SABUGALITE	$HAl(UO_2)_4(PO_4)_4.16H_2O$	$(H_2O)_{16}[HAl\{2\infty\}[UO_2P^tO_4]_4]$ (≈Autunite)	Mon. I 4/mmm	a=6.96Å Z=1 c=19.3Å			RRW,531;Pov.,556;Str.Tab., 351;K/B,162;Am.Min.,1951,36, 671-679.
SAINFELDITE	$Ca_5(AsO_4)_2(AsO_3OH)_2.4H_2O$	$Ca_5^{o}As_4^t[O_{14}(OH)_2(H_2O)_4]$	Mon. C2/c	a=18.781Å β=97°1' b=9.820Å Z=4 c=10.191Å	As_{I-II}(8f) Ca_I(4e) Ca_{II-III}(8f) ...		Bull.Min.,1972,95,33-41;Am. Min.,1965,50,806(Abs.);SR, 38A,326;Pov.,520;Str.Tab., 330;RRW,532.
SAKHAITE	$Ca_3Mg(BO_3)_2(CO_3).nH_2O$		Cub. Fd3m	a=14.749Å Z=16			Min.Mag.,1990,54,105-108; Min.Abs.,81-1239;Am.Min., 1966,51,1817(Abs.);Pov.,471.
SAMPLEITE	$NaCaCu_5(PO_4)_4Cl.5H_2O$		Orth. 2/m ...	a=9.70Å Z=8 b=38.40Å c=9.65Å			RRW,535;Pov.,551;Str.Tab., 349;K/B,161;Min.Mag.,1978, 42,369-371;Hölzel,174.
SANJUANITE	$Al_2(PO_4)(SO_4)(OH).9H_2O$		Tric. ?	a=11.314Å α=? b=90.18Å β=95°46' c=7.376Å γ=105°39' Z=2			Min.Mag.,1989,53,385-386; Pov.,562;Str.Tab.,572;Hölzel, 169;Am.Min.,1968,53,1-8.

Table 246

$A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SARMIENTITE	$Fe_2(AsO_4)(SO_4)(OH).5H_2O$		Mon. $P2_1/c$	a=6.55Å β=97°39' b=18.55Å Z=4 c=9.70Å			Am.Min.,1968,53,2077-2082; RRW,538-539;Pov.,517;Str. Tab.,342;Hölzel,169.
SATIMOLITE	$KNa_2Al_4(B_2O_5)_3Cl_3.13H_2O$		Orth. ?	a=12.62Å Z=4 b=18.64Å c=6.97Å			Am.Min.,1970,55,1069(Abs.); RRW,540;Pov.,487-488.
SCHOONERITE	$ZnMnFe_3(PO_4)_3(OH)_2.9H_2O$	$(H_2O)_9Zn^{[5]}\{2\infty\}[Mn^{o}Fe_3^{o}P_3^{t}O_{12}(OH)_2]$	Orth. Pmab	a=11.119Å Z=4 b=25.546Å c=6.437Å	Zn(4d) Mn(4d) $Fe_{I\text{-}II}$(4c) Fe_{III}(4d) ...		Am.Min.,1977,62,250-255,246-249;K/B,161;SR,43A,260; Hölzel,170.
SCHUILINGITE – - (Nd)	CuPb (Nd,Gd,Sm,Y) $(CO_3)_3(OH).1.5H_2O$		Orth. $P2_1cn$	a=7.418Å Z=4 b=18.87Å c=6.385Å			Encyc.Miner.Nam.,270;Hölzel, 107.
SEGELERITE	$CaMgFe(PO_4)_2(OH).4H_2O$	$Ca^{o}(H_2O)_4\{2\infty\}[Mg^{o}Fe^{o}P_2^{t}O_8(OH)]$ (=Overite)	Orth. Pbca	a=14.826Å Z=8 b=18.751Å c=7.307Å	Ca(8c) Mg(8c) Fe(8c) $P_{I\text{-}II}$(8c) ...		Am.Min.,1977,62,692-702;Am. Min.,1974,59,48-59;SR,43A, 252-253;K/B,157;RRW,550-551; Hölzel,176.
SENGIERITE	$Cu_2(UO_2)_2(VO_4)_2(OH)_2.6H_2O$	$Cu_2^{o}(OH)_2(H_2O)_6\{2\infty\}[(UO_2)_2V_2O_8]$	Mon. $P2_1/a$	a=10.599Å β=103.42° b=8.903Å Z=2 c=10.085Å			SR,46A,248;Am.Min.,1981,66, 220(Abs.);Pov.,503;Str.Tab., 356;RRW,554.
SHARPITE	$Ca(UO_2)_6(CO_3)_5(OH)_4.6H_2O$		Orth. ?	a=21.99Å Z=2 b=15.63Å c=4.487Å			Am.Min.,1985,70,220(Abs.); Hölzel,109.
SINKANKASITE	$MnAl(PO_3OH)_2(OH).6H_2O$	$\{2\infty\}[Mn^{o}(H_2O)_6\{1\infty\}[Al^{o}(P^{t}O_3OH)_2(OH)]]$	Tric. P $\bar{1}$	a=9.590Å α=108.04° b=9.818Å β=99.63° c=6.860Å γ=98.87° Z=2	Al_I(1h) Al_{II}(1e) Mn(2i) $P_{I\text{-}II}$(2i) ...		Am.Min.,1995,80,620-627;Am. Min.,1984,69,380-382;K/B,155.
SLAVÍKITE	$NaMg_2Fe_5(SO_4)_7(OH)_6.33H_2O$	$Na^{[3]}Mg_2^{o}(H_2O)_{33}2\infty\}[Fe_5^{o}S_7^{t}O_{28}(OH)_6]$	Trig. R $\bar{3}$	a=12.20Å a_R=13.67Å c=35.13Å α=53.03°' Z=1 Z_R=1/3			SR,41A,351;Str.Tab.,293;Pov., 599;Zeit.Krist.,1998,213,141-150;Bull.Mi.,1964,87,622
SODIUM - - ZIPPEITE	$Na_4(UO_2)_6(SO_4)_3(OH)_{10}.4H_2O$		Orth. ?	a=8.80Å Z=8 b=68.48Å c=14.55Å			Hölzel,138.
SPANGOLITE	$Cu_6AlSO_4(OH)_{12}Cl.3H_2O$		Hex. P3c1	a=8,245Å Z=2 c=14.34Å			RRW,571;Pov.,332;Str.Tab., 294;Hölzel,134;Am.Min.,1949, 34,181-187.
SVEITE	$KAl_7(NO_3)_4(OH)_{16}Cl_2.8H_2O$		Mon. ?	a=10.89Å β=92°10' b=13.04Å Z=6 c=30.71Å			Am.Min.,1982,67,1076(Abs.); Hölzel,96.
SWAMBOITE	$H_6U(UO_2)_6(SiO_4)_6.30H_2O$		Mon. $P2_1/a$	a=17.64Å β=103°24' b=21.00Å Z=6 c=20.12Å			Am.Min.,1983,68,1250(Abs.); Hölzel,195;Encyc.Miner.Nam., 292;Can.Min.,1981,19,553-557

Table 247 $A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SWARTZITE	$CaMg(UO_2)(CO_3)_3.12H_2O$	$Mg^{o}Ca^{[8ap]}(H_2O)_{12}[U^{[6p3c]}O_2(C^{tr}O_3)_3]$	Mon. $P2_1/m$	a=11.080Å β=99.43° b=14.634Å Z=2 c=6.439Å			Min.Abs.,87M/2145;Pov.,625; Str.Tab.,249;RRW,594;Hölzel, 109.
SYNADELPHITE	$(Mn,Mg,Ca)_9(AsO_4)_2(AsO_3)(OH)_9.2H_2O$	$(Mn,Mg,Ca)_9{}^{o}As_2{}^{o}As^{[5y]}[O_{11}(OH)_9(H_2O)_2]^{ch}$	Orth. Pnma	a=10.754Å Z=4 b=18.865Å c=9.884Å	As_I(4c) As_{II}(8d) Mn_I(4c) Mn_{II-V}(8d) ...		Am.Min.,1970,55,2023-2037; RRW,596;Pov.,512;Str.Tab., 321;SR,35A,360-361.
TENGCHONGITE	$Ca(UO_2)_6(MoO_4)_2O_5.12H_2O$		Orth. $A2_122$	a=15.616Å Z=4 b=13.043Å c=17.716Å			Am.Min.,1988,73,195-196 (Abs.);Hölzel,141.
TERUGGITE	$Ca_4Mg(AsB_6O_{11}(OH)_6)_2.14H_2O$	$Mg^{o}(H_2O)_6\{3\infty\}[Ca_4^{[8]}(As^{t}B_6^{\beta tr}O_{11}(OH)_6)_2(H_2O)_8]$	Mon. $P2_1/a$	a=15.675Å β=95°20' b=19.920Å Z=2 c=6.255Å	Mg(2a) As(4e) Ca_{I-II}(4e) B_{I-VI}(4e) ...		Am.Min.,1973,58,1034-1043; Am.Min.1968,53,1815-1827; SR,39A, 265-266,RRW,610; Pov.,483;Str.Tab.,262.
THREADGOLDITE	$Al(UO_2)_2(PO_4)_2(OH).8H_2O$	$(H_2O)_8(OH)[Al^{[6]}\{2\infty\}[U^{[2+4]}O_2P^{t}O_4]_2]$ (≈Autunite)	Mon. Cc	a=20.168Å β=110.71° b=9.842Å Z=8 c=19.719Å	U_{I-IV}(4a) P_{I-IV}(4a) Al_{I-II}(4a) ...	$(H_2O)_{10}[Ca^{[8]}\{2\infty\}[U^{(4+2)}O_2P^{t}O_4]_2]$ Dist. deriv. AUTUNITE	Acta Cryst.,1979,B35,3017-3020;SR,45A,313-314;Am. Min.,1980,65,209(Abs.);K/B, 162.
TIPTOPITE	$K_2(Li,Na,Ca)_6Be_6(PO_4)_6(OH)_2.1.3H_2O$	$(Li,Na,Ca)_6K_2(H_2O)_{1\cdot3}(OH)_2\{3\infty\}[Be_6{}^{t}P_6{}^{t}O_{24}]$ (≈Cancrinite,Zeolite)	Hex. $P6_3$	a=11.655Å Z=1 c=4.692Å	Be(6c) P(6c) O_{I-IV}(6c) K(2b) ...		Am.Min.,1987,72,816-820; Hölzel,159;LF,300.
TISINALITE	$H_3Na_3(Mn,Ca,Fe)TiSi_6(O,OH)_{18}.2H_2O$		Trig. $R\bar{3}m$	a=10.14Å a_R=7.30Å c=13.08Å α=88° Z=1 Z_R=1/3			Am.Min.,1981,66,219-220 (Abs.);Hölzel,208.
TLALOCITE	$Cu_{10}Zn_6Te_3O_{11}Cl(OH)_{25}.27H_2O$		Orth. ?	a=16.780Å Z=? b=19.985Å c=12.069Å			Min.Abs.,80-0755;Hölzel,93; Min.Mag.,1975,40,221-226; Hölzel,93.
TRASKITE	$Ba_{12}Fe_2Ti_6Si_{12}O_{54}Cl_3.7H_2O$		Hex. $P\bar{6}m2$	a=17.89Å Z=3? c=12.33Å			Min.Abs.,78-202;Hölzel,208; RRW,623-624;Pov.,366;Str. Tab.407;Am.Min.,1965,50,314-340.
TRIANGULITE	$Al_3(UO_2)_4(PO_4)_4(OH)_5.5H_2O$		Tric. P1 ...	a=10.39Å α=116.4° b=10.56Å β=107.8° c=10.60Å γ=113.4° Z=1			Am.Min.,1984,69,212(Abs.); Hölzel,183.
TRÖGERITE	$(H_3O)_2(UO_2)_2(AsO_4)_2.6H_2O$	$U_2{}^{o}As_2{}^{t}[O_{12}(H_2O)_6(H_3O)_2]$	Tet. P4/nmm	a=7.16Å Z=4 ? c=8.80Å			Pov.,522;RRW,629;Str.Tab., 352;Min.Abs.,76-874;Hölzel, 180;.
TRONA	$Na_3(HCO_3)(CO_3).2H_2O$	$2\infty[Na_3^{o/p}H(H_2O)_2\{g\}[C^{tr}O_3]_2]$	Mon. C2/C	a=20.346Å β=106°26' b=3.49Å Z=4 c=10.296Å	Na_I(4e) Na_{II}(8q) H_I(4a) H_{II-III}(8f) C(8f) O_{I-IV}(8f)	$2\infty[Na_3^{o/p}H(H_2O)_2\{g\}[C^{tr}O_3]_2]$ TRONA	LF,249;RRW,630;Pov,626,Am. Min.,1959,44,274-281;SR,20, 389-392;Str.Tab.,245.

Table 248 $A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ULRICHITE	$CaCu(UO_2)(PO_4)_2$ $4H_2O$		Mon. C2/m	a=12.79Å β=91.03° b=6.85Å Z=4 c=13.02Å			Am.Min.,1990,75,243(Abs.); Str.Tab.,584;Hölzel suppl..
URANCALCARITE	$Ca(UO_2)_3CO_3(OH)_6$ $.3H_2O$		Orth. Pbnm ...	a=15.42Å Z=4 b=16.08Å c=6.970Å			Am.Min.,1985,70,438-439 (Abs.);Bull.Min.,1984,107,21-24.
URANOPHANE	$Ca(UO_2)_2$ $(SiO_3OH)_2.5H_2O$	$Ca^{[8]}(H_2O)_5H_2\{2\infty\}$ $[(U^{[2+5]}O_2)_2(Si^tO_4)_2]$	Mon. $P2_1$	a=15.909Å β=97.27° b=7.002Å Z=2 c=6.665Å	$U_{I\text{-}II}$(2a) $Si_{I\text{-}II}$(2a) Ca(2a) $O_{I\text{-}XVII}$(2a) ...	$Ca^{[8]}(H_2O)_5H_2\{2\infty\}$ $[(U^{[2+5]}O_2)_2(Si^tO_4)_2]$ URANOPHANE	Acta Cryst.,1988,C44,421-424; Pov.,455-456,Str.Tab.,385; RRW,641;Am.Min.,1981,66, 610-625;LF,244.
URANOSPATHITE	$HAl(UO_2)_4(PO_4)_4$. $40H_2O$		Tet. $P4_2/n$	a=7.00Å Z=1 c=30.02Å			Min.Mag.,1978,C44,117-128; Pov.,763;RRW,642;Hölzel,180.
URANOTUNGSTI-TE	$(Fe,Ba,Pb)(UO_2)_2$ $WO_4(OH)_4.12H_2O$		Orth. $P222_1$ ...	a=9.22Å Z=2 b=13.81Å c=7.17Å			Am.Min.,1986,71,1547(Abs.); Hölzel,141.
URSILITE	$(Mg,Ca)_4(UO_2)_4$ $(Si_2O_5)_{5.5}(OH)_5$. $13H_2O$		Orth. ?	?			Am.Min.,1959,44,464-465; Hölzel,196.
VANMEERSS-CHEITE	$U(UO_2)_3(PO_4)_2$ $(OH)_6.4H_2O$	$(H_2O)_4(OH)_4U$ $\{2\infty\}[(U^{[2+5]}O_2)_3$ $(P^tO_4)_2(OH)_2]$	Orth. $P2_1/mn$	a=17.06Å Z=4 b=16.76Å c=7.023Å	$P_{I\text{-}II}$(4b) $U_{I\text{-}III}$(2a) $U_{IV\text{-}V}$(4b)...		K/B,161;Am.Min.,1982,67, 1077,(Abs.);Hölzel,181.
VANURALITE	$Al(UO_2)_2(VO_4)_2$ $(OH).11H_2O$		Mon. A2/a	a=10.55Å Z=4 b=8.44Å c=24.52Å			Bull.Min.,1970,93,242-248;Am. Min.,1971,56,639-640;Pov., 503;Str.Tab.,356;RRW,647-648; Hölzel,183.
VEATCHITE	$Sr_2(B_5O_8(OH))_2B$ $(OH)_3.H_2O$	$Sr_2^{[10/11]}B^{tr}(OH)_3$ $\{2\infty\}[B_2{}^tB_3{}^{tr}O_8(OH)]_2$	Mon. Aa	a=20.81Å β=92°1' b=11.74Å Z=4 c=6.64Å	$Sr_{I\text{-}II}$(4a) $B_{I\text{-}XI}$(4a) ...		Sov.Phys.Cryst.,1971,16,236-240;Hölzel,118;Am.Min.,1971, 56,1934-1954;Pov.,489;SR, 37A,373-374;RRW,650.
VEATCHITE – A	$Sr_2(B_5O_8(OH))_2B$ $(OH)_3.H_2O$		Tric. A1 ...	a=20.80Å α=90°0' b=11.72Å β=90°48' c=6.63Å γ=91°57' Z=4			Am.Min.,1979,64,362-366; Hölzel,119.
VILLYAELLENITE	$(Mn,Ca,Zn)_5$ $(AsO_3OH)_2(AsO_4)_2.$ $4H_2O$	$(Mn,Ca,Zn)_5{}^oAs_4{}^t$ $[O_{14}(OH)_2(H_2O)_4]$ (≈Sainfeldite)	Mon. Cc ...	a=18.015Å β=96.238° b=9.261Å Z=4 c=9.770Å	$Mn_{I\text{-}III}$(4a) $As_{I\text{-}III}$(4a) ...		Am.Min.,1988,73,1172-1178; Am.Min.,1986,71,1547(Abs.); Encyc.Miner.Nam.,320.
VISHNEVITE	$(Na,K,Ca)_8(Si_6Al_6)$ $O_{24}(SO_4).2H_2O$	$(Na,K,Ca)_8(SO_4)$ $(H_2O)_2\{3\infty\}[Si_6{}^tAl_6{}^tO_{24}]$ (≈Cancrinite,Zeolite)	Hex. $P6_32$	a=12.58Å Z=1 c=5.11Å	Si(6c) Al(6c) $O_{I\text{-}IV}$(6c)...		RRW,654;Str.Tab.,482;Pov, 764;Hölzel,240;LF,300.
VLADIMIRITE	$Ca_5(AsO_4)_2$ $(AsO_3OH)_2.5H_2O$		Mon. $P2_1/c$	a=5.81Å β=97°19' b=10.19Å Z=3 c=22.75Å			RRW,655;Hölzel,166;Str.Tab., 339;Pov., 520;Am.Min.,1965, 50,813(Abs.).

Table 249 $A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
VOGLITE	$Ca_2Cu(UO_2)(CO_3)_4.6H_2O$		Mon. $P2_1$ ...	a=25.97Å β=104.0° b=24.50Å Z=16 c=10.70Å			J.Appl.Cryst.,1979,12,616; Hölzel,109.
WALPURGITE	$Bi_4O_4(UO_2)(AsO_4)_2.2H_2O$		Tric. $P\bar{1}$	a=7.135Å α=101.47° b=10.426Å β=110.82° c=5.494Å γ=88.20° Z=1			Min.Abs.,83M/1226;Am.Min., 1983,68,852(Abs.);Pov.,524; Str.Tab.,350;RRW,661.
WERMLANDITE	$CaMg_7(Al,Fe)(SO_4)_2(OH)_{18}.12H_2O$	$Ca^{o}Mg_7^{o}(Al,Fe)^{o}S_2^{t}[O_8(OH)_{18}(H_2O)_{12}]$ (≈Hydrocalumite)	Trig. $P\bar{3}c1$	a=9.303Å Z=2 c=22.57Å	(Ca,Mg)(2b) (Al,Fe)(4d) S(4d) Mg_I(2a) Mg_{II-III}(6f) ...		Zeit.Krist.,1984,168,133-144; Am.Min.,1972,57,327(Abs.); RRW,667-668;Hölzel,107; Pov.,764.
WILHELMVIER-LINGITE	$CaMnFe(PO_4)_2(OH).2H_2O$		Orth. Pbca	a=14.80Å Z=8 b=18.50Å c=7.31Å			K/B,157;Am.Min.,1984,69,568 (Abs.);Hölzel,176.
YUKSPORITE	$(K,Ba)NaCa_2(Si,Ti)_4O_{11}(F,OH).H_2O$		Orth. ?	a=24.869Å Z=3 b=16.756Å c=7.057Å			Am.Min.,1986,71,1547-1548 (Abs.);Hölzel,224.
ZIPPEITE	$K_4(UO_2)_6(SO_4)_3(OH)_{10}.4H_2O$		Mon C2/c	a=8.755Å β=104.13° b=13.987Å Z=2 c=17.730Å	K_{I-II}(8f) (occ. ½) U_{I-II}(8f) ...		Can.Min.,1995,33,1091-1101; RRW,689;Pov.,602;Hölzel,138.
ZODACITE	$Ca_4MnFe_4(PO_4)_6(OH)_4.12H_2O$	$(H_2O)_{12}Ca_4^{[8]}\{1\infty\}[Mn^{o}Fe_4^{o}P_6^{t}O_{24}(OH)_4]$ (=Montgomeryite)	Mon. C2/c ...	a=10.152Å β=91.14° b=24.14Å Z=2 c=6.308Å			Am.Min.,1988,73,1179-1181; Min.Abs.,89M/2284;Hölzel, 176.
ZYKAITE	$Fe_4(AsO_4)_3SO_4(OH).15H_2O$		Orth. ?	a=20.85Å Z=8 b=7.036Å c=37.01Å			Am.Min.,1978,63,1284(Abs.); Hölzel,169.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
AËRINITE	$Ca_4(Al,Fe,Mg)_{10}Si_{12}O_{36}(OH)_{12}CO_3.12H_2O$		Mon. ?	a=14.690Å β=94°45' b=16.872Å Z=1 c=5.170Å			Am.Min.,1988,73,1498-1499 (Abs.);Hölzel,193.
ALBRECHT-SCHRAUFITE	$Ca_4Mg(UO_2)_2(CO_3)_6F_2.17H_2O$		Tric. $P\bar{1}$	a=13.562Å α=115.75° b=13.406Å β=107.66° c=11.636Å γ=92.86° Z=2			Acta Cryst.,1984,A40,C-247 (Abs.); Hölzel suppl..
BAKERITE	$Ca_4B_4(BO_4)(SiO_4)_3(OH)_3.H_2O$	$Ca_4(H_2O)\{2\infty\}[B_8{}^tSi_3{}^tO_{12}(OH)_3]$ (≈Datolite)	Mon. $P2_1/c$	a=4.82Å β=90°12' b=7.60Å Z=1 c=9.60Å			Am.Min.,1962,47,919-923; Hölzel,193;RRW,47;Pov.,728, 437;Str.Tab.,383.
BURCKHARDTITE	$Pb_2(Fe,Mn)Te(Si_3Al)O_{12}(OH)_2.H_2O$		Mon. ?	a=5.21Å β=90° b=9.04Å Z=2 c=12.85Å			Am.Min.,1979,64,355-358; Hölzel,237.
BYELORUSSITE - - (Ce)	$NaBa_2Ce_2MnTi_2Si_8O_{26}(F,OH).H_2O$		Orth. $P2_12_12_1$	a=10.57Å Z=4 b=9.69Å c=22.38Å			Am.Min.,1991,76,665-666 (Abs.);Hölzel suppl..
CAYSICHITE - (Y)	$(Ca,Yb,Er)_4Y_4Si_8O_{20}(CO_3)_6(OH).7H_2O$	$(Ca,Yb,Er)_4{}^{[8]}Y_4{}^{[8]}(H_2O)_7\{3\infty\}[Si_8{}^tO_{20}\{g\}[C^{tr}O_3]_6(OH)]$	Orth. $Ccm2_1$	a=13.27Å Z=2 b=13.91Å c=9.73Å			SR,44A,304;Hölzel,230;Am. Min.,1976,61,174-175.
CHALCOPHYLLITE	$Cu_9Al(AsO_4)_2(SO_4)_{1.5}(OH)_{12}.18H_2O$	$Cu_9{}^oAl^oAs_2{}^tS_{1.5}{}^t[O_{14}(OH)_{12}(H_2O)_{18}]$	Trig. $R\bar{3}$	a=10.756Å a_R=20.49Å c=29.678Å α=30°40' Z=3 Z_R=1	Cu_I(9d)Cu_{II}(18f) Al(3b) As(6c) S(6c) ...		Zeit.Krist.,1980,151,129-140; Min.Abs.,80-4170;SR,46A,341; Pov.,525;Str.Tab.,346;RRW, 119.
CHARLESITE	$Ca_6Al_2(SO_4)_2B(OH)_4(OH,O)_{12}.26H_2O$	$Ca_6{}^{[8]}(H_2O)_{26}\{3\infty\}[Al_2{}^oS_2{}^tB^tO_8(OH)_4(OH,O)_{12}]$ (=Sturmanite)	Trig. P31c	a=11.16Å Z=2 c=21.21Å			Am.Min.,1983,68,1033-1037; Hölzel,137.
DEMESMAEKERITE	$Cu_5Pb_2(UO_2)_2(SeO_3)_6(OH)_6.2H_2O$	$Pb_2{}^{[9]}(H_2O)_2\{3\infty\}[Cu_5{}^oSe_6{}^{[4y]}U_2{}^{[7y]}O_{22}(OH)_6]$	Tric. $P\bar{1}$	a=11.955Å α=89.78° b=10.039Å β=100.36° c=5.639Å γ=91.34° Z=1	U(2i) Pb(2i) Se_{I-III}(2i) Cu_I(1h) Cu_{II-III}(2i) ...		Acta Cryst.,1986,C39,824-827; Hölzel,95;RRW,168;Pov.,567; Str.Tab.,229;Bull.Min.,1965,88, 422-425.
ENGLISHITE	$K_3Na_2Ca_{10}Al_{15}(PO_4)_{21}(OH)_7.26H_2O$		Mon. A2/a ...	a=39.43Å β=111°16' b=11.86Å Z=4 c=20.67Å			Can.Min.,1984,22,469-470; Hölzel,174;Min.Mag.,1976,40, 863-866.
ERIONITE	$K_2NaCa_{1.5}Mg(Al_8Si_{28})O_{72}.28H_2O$	$K_2{}^{[12]}NaCa_{1.5}Mg(H_2O)_{28}\{3\infty\}[Al_8{}^tSi_{28}{}^tO_{72}]$ (Zeolite)	Hex. $P6_3/mmc$	a=13.26Å Z=1 c=15.12Å	Ca(2b) Si_{I-II}(24l) ...		Bull.Min.,1969,92,250-256;SR, 34A,375;Am.Min.,1976,61,853-863;RRW,195;Pov.,358.
FRANÇOISITE - - (Nd)	$(Nd,Y,Sm,Ce,Pr)(UO_2)_3(PO_4)_2O(OH).6H_2O$		Mon. $P2_1/c$	a=9.298Å β=114°46' b=15.605Å Z=4 c=13.668Å			Min.Abs.,89M/2281;Hölzel, 182.
FRANSOLETITE	$Ca_3Be_2(PO_4)_2(PO_3OH)_2.4H_2O$		Mon. $P2_1/a$	a=7.354Å β=96.41° b=15.07Å Z=2 c=7.055Å			Am.Min.,1985,70,512(Abs.); K/B,153;Hölzel,159.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
HUMBERSTONITE	$K_3Na_7Mg_2(SO_4)_6(NO_3)_2.6H_2O$	$K_3^{[10]}(H_2O)_6\{2\infty\}[Na_7^{o}Mg_2^{o}S_6^{f}N_2^{tr}O_{30}]$ Subs.d.Ungemachite	Trig. R $\bar{3}$	a=10.9055Å a_R=10.28Å c=24.3949Å α=64°0' Z=3 Z_R=1	N(6c) S(18f) K(9e) Mg(3a)... Na_I(6c)(v.occ.)		Can.Min.,1994,32,381-385; Am.Min.,1970,55,1518-1533; Pov.,600;Str.Tab.,298.
HYDROMBOBOMKULITE	$(Ni,Cu)Al_4(NO_3)_2(SO_4)(OH)_{12}.14H_2O$		Mon. ?	a=10.145Å β=90.55° b=17.155Å Z=? c=20.870Å			Am.Min.,1982,67,415-416 (Abs.).
ILÍMAUSSITE - - (Ce)	$Na_4Ba_2CeFeNb_2Si_8O_{28}.5H_2O$		Hex. $P6_3/mcm$ ...	a=10.80Å Z=3 c=20.31Å			Am.Min.,1969,54,992-993 (Abs.);Pov.,368;Str.Tab.,401; RRW,297-298;Hölzel,198.
JAHNSITE - - (CaMnFe)	$CaMnFe_2^{2+}Fe_2^{3+}(PO_4)_4(OH)_2.8H_2O$	$Ca^{[6]}Mn^{[6]}Fe_2^{(2+)o}Fe_2^{(3+)o}P_4^{t}[O_{16}(OH)_2(H_2O)_8]$	Mon. ?	?			Hölzel,177;Min.Mag.,1978,42, 309-323.
JAHNSITE - - (CaMnMg)	$CaMn(Mg,Fe)_2Fe_2^{3+}(PO_4)_4(OH)_2.8H_2O$	$Ca^{[6]}Mn^{[6]}(Mg,Fe)_2^{o}Fe_2^{(3+)o}P_4^{t}[O_{16}(OH)_2(H_2O)_8]$ (≈Whiteite)	Mon. P2/a	a=14.94Å β=110.16° b=7.14Å Z=2 c=9.93Å	Fe_I(2a) Fe_{II}(2c) P_{I-II}(4e) ...		Am.Min.,1974,59,964-973;Am. Min.,1974,59,48-59;K/B,84-85; RRW,308;SR,40A,248-249.
JAHNSITE - - (CaMnMn)	$CaMnMn_2Fe_2^{3+}(PO_4)_4(OH)_2.8H_2O$	$Ca^{[6]}Mn^{[6]}Mn_2^{o}Fe_2^{(3+)o}P_4^{t}[O_{16}(OH)_2(H_2O)_8]$	Mon. P2/a ...	a=14.887Å β=109.77° b=7.152Å Z=2 c=9.966Å			Am.Min.,1990,75,401-404; Hölzel suppl..
JOURAVSKITE	$Ca_3Mn(SO_4)(CO_3)(OH)_6.12H_2O$		Hex. $P6_3$ ...	a=11.06Å Z=2 c=10.50Å	Mn(2a) Ca(6c) S(2b) C(2b) ...		Acta Cryst.,1969,B25,1943-1951;SR,34A,313-314;Bull. Min.,1965,88,254-262;Pov., 600-601;Str.Tab.,297;RRW, 313.
KAMITUGAITE	$PbAl(UO_2)_5((P,As)O_4)_2(OH)_9.9.5H_2O$		Tric. P1 ...	a=10.98Å α=95.1° b=15.96Å β=96.1° c=9.068Å γ=89.0° Z=2			Am.Min.,1985,70,437(Abs.); Hölzel,182;K/B,175.
LANNONITE	$HCa_4Mg_2Al_4(SO_4)_8F_9.32H_2O$		Tet. ?	a=6.84Å Z=1 c=28.01Å			Min.Mag.,1983,47,37-40; Hölzel,137.
MACQUARTITE	$CuPb_3(CrO_4)SiO_3(OH)_4.2H_2O$		Mon. C2/m ...	a=20.81Å β=91°48' b=5.84Å Z=4 c=9.26Å			Am.Min.,1981,66,638(Abs.); Hölzel,139.
MANTIENNEITE	$KMg_2Al_2Ti(PO_4)_4(OH)_3.15H_2O$		Orth. Pbca	a=10.409Å Z=4 b=20.330Å c=12.312Å			Am.Min.,1985,70,1330(Abs.); Hölzel,173;K/B,154.
MCNEARITE	$NaCa_5(AsO_4)(AsO_3OH)_4.4H_2O$		Tric. P1 ...	a=13.50Å α=90° b=14.10Å β=92° c=6.95Å γ=119° Z=2			Am.Min.,1982,67,856(Abs.); Hölzel,165.
MELKOVITE	$CaFe_2Mo_5O_{10}(PO_4)_2(OH)_{12}.8H_2O$		Mon. ?	?			Am.Min.,1970,55,320(Abs.); Hölzel,178;RRW,390;K/B,191.

Table 252 $A_pB_qC_rD_sE_xF_yG_z.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MORINITE	$NaCa_2Al_2(PO_4)_2(OH)F_4.2H_2O$	$(H_2O)_2\{3\infty\}[Ca_2^{[8]}Na^{[5by]}\{g\}[Al_2{}^oP_2{}^tO_8(OH)F_4]]$	Mon. $P2_1/m$	a=9.454Å β=105.46° b=10.692Å Z=2 c=5.444Å	Ca(4f) Al(4f) Na(2e) P_{I-II}(2e) ...		Can.Min.,1979,17,93-102;Am. Min.,1958,43,585-594;SR,44A, 247-248;K/B,64-65;Pov.,550.
NICKELALUMITE	$(Ni,Cu)Al_4(SO_4)(NO_3)_2(OH)_{12}.3H_2O$		Mon. ?	a=10.175Å β=95.95° b=8.860Å Z=4 c=17.174Å			Am.Min.,1982,67,415-416 (Abs.);Hölzel,136:K/B,154.
PAULKERRITE	$K(Mg,Mn)_2Ti(Fe,Al)_2(PO_4)_4(OH)_3.15H_2O$		Orth. Pbca	a=10.49Å Z=4 b=20.75Å c=12.44Å			Am.Min.,1985,70,875(Abs.); Hölzel,173.
PEISLEYITE	$Na_3Al_{16}(PO_4)_{10}(SO_4)_2(OH)_{17}.20H_2O$		Mon. ?	a=13.31Å β=11.0° b=12.62Å Z=2 c=23.14Å			Am.Min.,1983,68,849-850 (Abs.);K/B,176;Hölzel,173.
PERHAMITE	$Ca_3Al_7(SiO_4)_3(PO_4)_4(OH)_3.16.5H_2O$		Hex. P6/mmm	a=7.02Å Z=1 c=20.21Å			Min.Mag.,1977,41,437-442; Hölzel,241.
PICROPHARMACOLITE	$Ca_4Mg(AsO_3OH)_2(AsO_4)_2.11H_2O$	$(H_2O)_{11}Ca_4^{[6/7]}\{2\infty\}[Mg^oAs_4{}^tO_{14}(OH)_2]$ (≈Guerinite)	Tric. P $\bar{1}$	a=13.547Å α=99.85° b=13.500Å β=96.41° c=6.710Å γ=91.60° Z=2	As_{I-IV}(2i) Mg(2i) Ca_{I-IV}(2i) ...		Am.Min.,1981,66,385-391;Am. Min.,1976,61,326-328;Pov., 515;Str.Tab.,337;Hölzel,164.
PLANERITE	$Al_6(PO_4)_2(PO_3OH)_2(OH)_8.4H_2O$		Tric. P $\bar{1}$?	a=7.70Å α=110°50' b=10.109Å β=115°4' c=7.390Å γ=70°46' Z=1 ?			Hölzel suppl..
POTTSITE	$PbBi(VO_4)(VO_3OH).2H_2O$		Tet. $I4_122$	a=11.084Å Z=10 c=12.634Å			Min.Mag.,1988,52,389-390; Hölzel,165.
RABBITTITE	$Ca_3Mg_3(UO_2)_2(CO_3)_6(OH)_4.18H_2O$		Mon. $P2_1/a$?	a=32.6Å β=90° b=23.8Å Z=8 c=9.45Å			Pov.,625;RRW,507;Str.Tab., 249;Hölzel,109;Encyc.Miner. Nam.,251;Am.Min.,1955,40, 201-206.
RANUNCULITE	$Al(UO_2)(PO_3OH)(OH)_3.4H_2O$		Mon. ?	a=11.1Å β≈90° b=17.7Å Z=14 c=18.0Å			Min.Mag.,1979,43,321-323; Hölzel,182;K/B,161.
RICHELSDORFITE	$Ca_2Cu_5Sb(AsO_4)_4(OH)_6Cl.6H_2O$	$(H_2O)_6\{2\infty\}[Sb^o(OH)_6]\{2\infty\}[Ca_2^{[7]}Cu_5^{[5]}Cl(As^tO_4)_4]$ (≈Whiteite)	Mon. C2/m	a=14.079Å β=101.05° b=14.203Å Z=4 c=13.470Å	Cu_I(4i) Cu_{II-III}(8j) Ca(8j) Sb(4f) ...		Zeit.Krist.,1987,179,323-334; Am.Min.,1984,69,211(Abs.).
RITTMANNITE	$(Mn,Ca)Mn(Fe,Mn,Mg)_2(Al,Fe)_2(PO_4)_4(OH)_2.8H_2O$		Mon. P2/a	a=15.01Å β=112.82° b=6.89Å Z=2 c=10.16Å			Can.Min.,1989,27,447-449; Hölzel suppl..
ROSCHERITE (Monoclinic)	$Ca(Mg,Fe)_2Be_2Al_x(PO_4)_3(OH)_3.2H_2O$	$(H_2O)_2Ca^{[7]}\{3\infty\}[(Mg,Fe)_2{}^oBe_2Al_x{}^oP_3{}^tO_{12}(OH)_3]$	Mon. C2/c	a=15.874Å β=95°34' b=11.854Å Z=4 c=6.605Å			Min.Abs.,76/3306;Am.Min., 1958,43,824-838;SR,43A,248; K/B,137-138;Pov.,551.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ROSCHERITE (Triclinic)	$CaBe_2Mn_2Fe_x(PO_4)_3(OH)_2.3H_2O$	$(H_2O)_3Ca^{[7]}\{3\infty\}[Mn_2^{o}Fe_x^{o}Be_2^{t}P_3^{t}O_{12}(OH)_2]$	Tric. C $\bar{1}$	a=15.921Å α=91°4' b=11.965Å β=94°21' c=6.741Å γ=89°59' Z=4			Am.Min.,1978,63,427(Abs.); SR,43A,248;K/B,138;Str.Tab., 340.
ROUBAULTITE	$Cu_2O_2(UO_2)_3(CO_3)_2(OH)_2.4H_2O$	$(H_2O)_4\{3\infty\}[Cu_2^{o}U_3^{[7/8]}C_2^{tr}O_{14}(OH)_2]$	Tric. P $\bar{1}$	a=7.767Å α=92.16° b=6.924Å β=90.89° c=7.850Å γ=93.48° Z=1	U_I(1a) U_{II}(2i) Cu(2i) C(2i) O_{I-X}(2i) ...		Acta Cryst.,1985,C41,654-657; Bull.Min.,1970,93,550-554;Am. Min.,1972,57,1912(Abs.);Pov., 327;RRW,528.
SHABAITE - (Nd)	$Ca(Nd,Sm,Y)_2(UO_2)(CO_3)_4(OH)_2.6H_2O$		Mon. P2 ...	a=9.208Å β=90.3° b=32.09Å Z=5 c=8.335Å			Am.Min.,1990,75,433-434 (Abs.);Hölzel,110;Eur.J.Min., 1989,1,85-88.
SKLODOWSKITE	$(H_3O)_2Mg(UO_2)_2(SiO_4)_2.4H_2O$		Mon. C2/m	a=17.382Å β=105.9° b=7.047Å Z=2 c=6.610Å	Mg(2c) Si(4i) U(4i) O_{I-IV}(4i) O_V(8j) ...		SR,43A,323-324,27,710-711; Pov.,455;Str.Tab.,385;Am.Min. ,1981,66,610-625;Hölzel,195.
SODIUM BETPAKDALITE	$Na_2CaFe_2^{3+}(As_2O_4)(MoO_4)_6.15H_2O$		Mon. ?	a=11.28Å β=94°30' b=19.30Å Z=4 c=17.67Å			Am.Min.,1972,57,312-313 (Abs.);RRW,568-569;Hölzel, 178.
SODIUM BOLTWOODITE	$(H_3O)(Na,K)(UO_2)SiO_4.H_2O$		Orth. $P2_12_12_1$	a=13.931Å β=103.2° b=6.9436Å Z=8 c=6.6749Å			Can.Min.,1997,35,735-741; Am.Min.,1976,61,1054-1055 (Abs.);Am.Min.,1981,66,610-625; Hölzel, 195.
STRONTIOJOA-QUINITE	$(Na,Fe)_2Ba_2Sr_2Ti_2(SiO_3)_8(O,OH)_2.H_2O$	$(Na,Fe)_2Ba_2Sr_2Ti_2^{o}(O,OH)_2(H_2O)\{2\infty\}[Si_8^{t}O_{24}]$	Mon. P2 ...	a=10.516Å β=109°17' b=9.764Å Z=2 c=11.87Å			Am.Min.,1982,67,809-816; Hölzel,206.
STRONTIO- - ORTHOJOAQUI-NITE	$Na_2Ba_2Sr_2Ti_2(SiO_3)_8(O,OH)_2.H_2O$	$Na_2Ba_2Sr_2Ti_2^{o}(O,OH)_2(H_2O)\{2\infty\}[Si_8^{t}O_{24}]$	Orth. Pcam ...	a=10.517Å Z=? b=9.77Å c=22.392Å			Am.Min.,1982,67,809-816; Hölzel,288.
STURMANITE	$Ca_6Fe_2(SO_4)_2(B(OH)_4)(OH)_{12}.25H_2O$	$Ca_6^{[8]}Fe_2^{o}S_2^{t}B^{t}[O_8(OH)_{16}(H_2O)_{25}]$ (=Ettringite)	Trig. P31c	a=11.16Å Z=2 c=21.79Å			Am.Min.,1988,73,195;Hölzel, 137.
THAUMASITE	$Ca_3Si(OH)_6(CO_3)(SO_4).12H_2O$	$Ca_6^{[8]}Si^{o}C^{tr}O_3S^{t}[O_7(OH)_6(H_2O)_{12}]$ (≈Ettringite)	Hex. $P6_3$	a=11.04Å Z=2 c=10.39Å	Ca(6c) Si(2a) C(2b) S(2b) ...		Acta Cryst.,1971,B27,594-601;SR,37A,344-345,21,449-451,18,533-534;RRW,612; Pov.,422;Str.Tab.,378.
TUSCANITE	$KCa_6(Si,Al)_{10}O_{22}(SO_4,CO_3)_2(OH).H_2O$	$K^{[10]}Ca_6(H_2O)(OH)\{g\}[S^{t}O_4]\{g\}[C^{tr}O_3]_2\{2\infty\}[(Si,Al)_{10}^{t}O_{22}]$	Mon. $P2_1/a$	a=24.03Å β=106.94° b=5.11Å Z=2 c=10.88Å	Ca_{I-III}(4e) K(4e) $(Si,Al)_{I-V}$(4e) ...		Am.Min.,1977,62,1114-1120; Am.Min.,1977,62,1110-1113; SR,43A,325-326;Hölzel,227.
TYROLITE	$CaCu_5(AsO_4)_2(CO_3)(OH)_4.6H_2O$		Orth. Pmma	a=10.50Å Z=8 ? b=54.71Å c=5.59Å			RRW,635;Pov.,518;Hölzel,179.
UNGEMACHITE	$K_3Na_8Fe(SO_4)_6(NO_3)_2.6H_2O$	$K_3^{[10]}Na_8^{[6]}(H_2O)_6\{g\}[Fe^{o}(S^{t}O_4)_6]\{g\}[N^{tr}O_3]_2$	Trig. R $\bar{3}$	a=10.898Å a_R=10.39Å c=24.989Å α=62°59' Z=3 Z_R=1	Fe(3a) K(9e) S(18f) ...		Am.Min.,1986,71,826-829;Str. Tab.,297-298;Pov.,600;RRW, 639;Hölzel,137.

Table 254

$A_pB_qC_rD_sE_xF_yG_r.nAq.$(cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
UPALITE	$Al(UO_2)_3(PO_4)_2O(OH).7H_2O$		(Mon.) Bbcm ...	a=34.68Å Z=16 b=16.81Å c=13.72Å			Am.Min.,1980,65,208(Abs.); K/B,161;Hölzel,182.
VOCHTENITE	$(Fe^{2+},Mg)Fe^{3+}(UO_2)_4(PO_4)_4(OH).12\text{-}13H_2O$		Mon. ?	a=12.606Å β=102.31° b=19.990Å Z=3 c=9.990Å			Min.Mag.,1989,53,473-478; Hölzel suppl..
WALENTAITE	$H_4Ca_4Fe_{12}(AsO_4)_{10}(PO_4)_6.28H_2O$		Orth. I 222 ...	a=26.24Å Z=1 b=10.31Å c=7.38Å			Am.Min.,1984,69,1193-1194; K/B,175;Hölzel,164.
WENKITE	$Ba_4Ca_6(Si,Al)_{20}O_{39}(OH)_2(SO_4)_3.nH_2O$	$Ba_4^{[12]}Ca_6^{[8]}(OH)_2(SO_4)_3(H_2O)_n$ $\{3\infty\}[(Si,Al)_{20}{}^tO_{39}]$	Hex. P$\bar{6}$2m	a=13.511Å Z=1 c=7.462Å	Ba_I(1b) Ba_{II}(3g) $(Si,Al)_I$(12d) $(Si,Al)_{II}$(6k) 1/2(Al,Si)(4h)...		Acta Cryst.,1974,B30,1262-1266; Zeit.Krist.,1973,137,113-126; Pov.,349;Str.Tab.,482; RRW,667.
WHITEITE – - (CaFeMg)	$Ca(Fe,Mn)Mg_2Al_2(PO_4)_4(OH)_2.8H_2O$	$Ca^{[8]}(Fe,Mn)^{[6]}Mg_2{}^oAl_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_8]$ (≈Jahnsite)	Mon. P2/a	a=14.90Å β=113°7' b=6.98Å Z=2 c=10.13Å			Min.Mag.,1978,42,309-323; K/B,155;Hölzel,176.
WHITEITE – - (MnFeMg)	$MnFeMg_2Al_2(PO_4)_4(OH)_2.8H_2O$	$Mn^{[8]}Fe^{[6]}Mg_2{}^oAl_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_8]$	Mon. P2/a ...	a=14.99Å β=113°19' b=6.96Å Z=2 c=10.14Å			Min.Mag.,1978,42,309-323; Hölzel,176.
WHITEITE – - (CaMnMg)	$CaMnMg_2Al_2(PO_4)_4(OH)_2.8H_2O$	$Ca^{[8]}Mn^{[6]}Mg_2{}^oAl_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_8]$	Mon. P2/a	a=14.842Å β=112.59° b=6.976Å Z=2 c=10.109Å			Can.Min.,1989,27,699-702.
WICKSITE	$NaCa_2MgFe(Fe,Mn)_4(PO_4)_6.2H_2O$	$Ca_2^{[9]}(H_2O)_2$ $\{3\infty\}[Na^oMg^oFe^o(Fe,Mn)_4{}^oP_6{}^tO_{24}]$	Orth. Pcab	a=12.524Å Z=4 b=12.907Å c=11.646Å	Na(4a) Ca(8c) (Fe,Mn)(8c) $P_{I\text{-}III}$(8c) ...		Can.Min.,1997,35,777-784; Hölzel,164.
WYARTITE	$Ca_3U(UO_2)_6(CO_3)_2(OH)_{18}.4H_2O$		Orth. $P2_12_12_1$	a=11.25Å Z=2 b=7.09Å c=20.80Å			Am.Min.,1960,45,200-208;Am. Min.,1959,44,908(Abs.);Hölzel, 110;RRW,677;Pov.,327.
YECORAITE	$Fe_3Bi_5O_9(TeO_3)(TeO_4)_2.9H_2O$		?	?			Am.Min.,1986,71,1547(Abs.); Hölzel,93.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ALTHUPITE	$AlTh(UO_2)_7(PO_4)_4O_2(OH)_5.15H_2O$	$U^{[7by]}Th^{[6p3c]}Al^{o}O(OH)_3(H_2O)_{15}\{2\infty\}[(UO_2)_3O(OH)(P^tO_4)_2]_2$ (≈Phosphuranylite)	Tric. P $\bar{1}$	a=10.935Å α=72.64° b=18.567Å β=68.20° c=13.504Å γ=84.21° Z=2			Am.Min.,1988,73,189-199; Hölzel,183;K/B,162.
ASHCROFTINE- - (Y)	$K_5Na_5(Y,Ca)_{12}Si_{28}O_{70}(OH)_2(CO_3)_8.8H_2O$	$K_5^{[10/12]}Na_5^{[8/12]}(Y,Ca)_{12}(C^{tr}O_3)_8(H_2O)_8(OH)_2\{2\infty\}[Si_{28}{}^tO_{70}]$ (≈Apophyllite)	Tet. I4/mmm	a=23.994Å Z=4 c=17.512Å	K_{I-II}(8i) Si_{I-V}(32o) C_{I-II}(6l)...		Am.Min.,1987,72,1176-1189; RRW,39;Pov.,433.
ASSELBORNITE	$(Pb,Ba)(UO_2)_6(BiO)_4(AsO_4)_2(OH)_{12}.3H_2O$		Cub. Im3m...	a=15.66Å Z=4			Am.Min.,1984,69,565-569; Hölzel,183.
CARLETONITE	$KNa_4Ca_4Si_8O_{18}(CO_3)_4(F,OH).H_2O$	$K^{[10]}Na_4^{[5+1]}Ca_4^{[7]}(CO_3)_4(F,OH)(H_2O)\{2\infty\}[Si_8{}^tO_{18}]$	Tet. P4/mbm	a=13.178Å Z=4 c=16.695Å	K(4f)Si_{I-II}(16l) Ca(16l)...		Am.Min.,1972,57,765-778;Am. Min.,1971,56,1855-1866;RRW 107.
CHESSEXITE	$Na_4Ca_2Mg_3Al_8(SiO_4)_2(SO_4)_{10}(OH)_{10}.40H_2O$		Orth. ?	a=13.70Å Z=2 b=27.96Å c=9.99Å			Am.Min.,1984,69,406-412; Hölzel,137.
COCONINOITE	$Fe_2^{3+}Al_2(UO_2)_2(PO_4)_4(SO_4)(OH)_2.20H_2O$		Orth. ?	?			RRW,139-140;Pov.,559;Str. Tab.,356;Am.Min.,1966,51,651 -663;Hölzel,182.
EHRLEITE	$Ca_2ZnBe(PO_4)_2(PO_3OH).4H_2O$	$Ca_2^{[7/8]}(P^tO_3OH)(H_2O)_4\{2\infty\}[Zn^tBe^tP_2{}^tO_8]$	Tric. P $\bar{1}$	a=7.130Å α=94.31° b=7.430Å β=102.07° c=12.479Å γ=82.65° Z=2	Ca_{I-II}(2i)Zn(2i) Be(2i)...		Can.Min.,1987,25,767-774; K/B,153;Hölzel,159.
IQUIQUEITE	$K_3Na_4Mg(CrO_4)B_{24}O_{39}(OH).12H_2O$		Hex. P31c	a=11.636Å Z=3 c=30.158Å			Am.Min.,1986,71,830-836; Hölzel,118.
JOAQUINITE- (Ce)	$NaBa_2FeTi_2Ce_2(SiO_3)_8O_2(OH).H_2O$	$Na^{[6]}Ba_2^{[10]}Fe^{[5]}Ti_2^{o}Ce_2^{[7]}O_2(OH)(H_2O)\{2\infty\}[Si_4{}^tO_{12}]_2$	Mon. C2	a=10.516Å β=109.67° b=9.686Å Z=2 c=11.833Å	Na(2b)Ba(4b) Ce(4c)Fe(2b) Ti(4c)...		Am.Min.,1975,60,872-878; Am.Min.,1972,57,85-102;Str. Tab.,401;Pov.,366.
LEPERSONNITE- - (Gd)	$Ca(Gd,Dy)_2(UO_2)_{24}(CO_3)_8Si_4O_{12}.60H_2O$		Orth. Pnnm ...	a=16.23Å Z=2 b=38.74Å c=11.73Å			Am.Min.,1983,68,1248-1252; Hölzel,110.
MACHATSCHKI- ITE	$(Ca,Na)_6(AsO_4)(AsO_3OH)_3PO_4.15H_2O$		Trig. R3c	a=15.127Å Z=6 c=22.471Å			Am.Min.,1983,68,851-852 (Abs.);Hölzel,177;Am.Min., 1977,62,1260(Abs.);K/B,167.
MCAUSLANITE	$Fe_3Al_2(PO_4)_3(PO_3OH)F.18H_2O$		Tric. P1...	a=10.055Å α=105.84° b=11.568Å β=93.66° c=6.888Å γ=106.47° Z=1			Can.Min.,1988,26,917-921; Hölzel,suppl..

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
MENDOZAVILITE	$NaCa_2Fe_6(PO_4)_2(PMo_{11}O_{39})(OH,Cl)_{10}.33H_2O$		?	?			Am.Min.,1988,73,193(Abs.); Hölzel,178.
OBRADOVICITE	$H_4(K,Na)CuFe_2(AsO_4)(MoO_4)_5.12H_2O$		Orth. Pcmn	a=15.046Å Z=4 b=14.848Å c=11.056Å			Min.Mag.,1986,50,283-284; Hölzel,178.
ORPHEITE	$H_6Pb_{10}Al_{20}(PO_4)_{12}(SO_4)_5(OH)_{40}.11H_2O$ (?)		Trig. R 3m	a=7.00Å Z=? c=16.72Å			Am.Min.,1976,61,176(Abs.); Encyc.Miner.Nam.,224;Hölzel, 174;K/B,176.
ORTHOJOAQUINITE- (Ce)	$NaBa_2FeCe_2Ti_2(SiO_3)_8O_2(O,OH).H_2O$	$Na^{[6]}Ba_2^{[10]}Fe^{[5]}Ti_2^{o}Ce_2^{[7]}O_2(O,OH)(H_2O)\{2\infty\}[Si_4^{t}O_{12}]_2$	Orth.? Ccmm...	a=10.477Å Z=4 b=9.599Å c=22.59Å			Am.Min.,1982,67,809-816; Hölzel,206.
PARAMENDOZAVILITE	$NaAl_4Fe_7(PO_4)_5(PMo_{12}O_{40})(OH)_{16}.56H_2O$		?	?			Am.Min.,1988,73,194(Abs.); Hölzel,178.
PUMPELLYITE- - (Fe^{2+})	$Ca_2Fe^{2+}Al_2(SiO_4)(Si_2O_7)(OH)_2.H_2O$	$Ca_2^{[7]}(H_2O)\{3\infty\}[Fe^{o}Al_2^{o}Si_3^{t}O_{11}(OH)_2]$ (≈Clinozoisite)	Mon. A2/m	a=8.81Å α=97.6° b=5.94Å Z=2 c=19.14Å			RRW,497;Pov.,404-405;Str. Tab.,399;Am.Min.,1983,68, 1250(Abs.);Hölzel,203.
PUMPELLYITE- - (Fe^{3+})	$Ca_2Fe^{3+}Al_2(SiO_4)(Si_2O_7)(OH,O)_2.H_2O$	$Ca_2^{[7]}(H_2O)\{3\infty\}[Fe^{o}Al_2^{o}Si_3^{t}O_{11}(OH,O)_2]$ (≈Clinozoisite)	Mon. A2/m	?			Encyc.Miner.Nam.,246.
PUMPELLYITE- - (Mg)	$Ca_2MgAl_2(SiO_4)(Si_2O_7)(OH)_2.H_2O$	$Ca_2^{[7]}(H_2O)\{3\infty\}[Mg^{o}Al_2^{o}Si_3^{t}O_{11}(OH)_2]$	Mon. A2/m	a=8.83Å β=97°7' b=5.90Å Z=4 c=19.17Å	Ca_{I-II}(4h) (Al,Mg,Fe)(4f) $Al(8j)Si_{I-III}$(4i)...		Acta Cryst.,1969,B25,2276-2281;Hölzel,203.
PUMPELLYITE- - (Mn)	$Ca_2MnAl_2(SiO_4)(Si_2O_7)(OH)_2.H_2O$	$Ca_2^{[7]}(H_2O)\{3\infty\}[Mn^{o}Al_2^{o}Si_3^{t}O_{11}(OH)_2]$	Mon. A2/m	a=8.923Å β=97°8' b=5.995Å Z=4 c=19.156Å			Bull.Min.,1981,104,396-399; Am.Min.,1983,68,1250(Abs.); Hölzel,203.
ROEBLINGITE	$Ca_6MnPb_2(Si_3O_9)_2(SO_4)_2(OH)_2.4H_2O$	$Ca_6^{o}Pb_2(OH)_2(H_2O)_4\{2\infty\}[Mn^{o}(Si_3^{t}O_9)_2]$	Mon. C2/m	a=13.208Å β=106.65°' b=8.287Å Z=2 c=13.089Å	Mn(2d)Pb(4i) Ca_I(4i)Ca_{II}(8j) ...		Am.Min.,1984,69,1173-1179; Am.Min.,1966,51,504-508; RRW,522;Pov.,394;Str.Tab., 378.
SARYARKITE-(Y)	$Ca(Y,Th)Al_5(SiO_4)_2(PO_4)_2(OH)_7.6H_2O$		Tet. $P42_12$...	a=8.213Å Z=4 b=6.55Å			Am.Min.,1964,49,1775(Abs.); RRW,539;Pov.,395;Str.Tab., 572;Hölzel,193.
SCHRÖCKINGERITE	$NaCa_3(UO_2)(SO_4)(CO_3)_3F.10H_2O$	$(H_2O)_4\{2\infty\}[NaCa_3(UO_2)(C^{tr}O_3)_3(S^{t}O_4)F(H_2O)_6]$	Tric. P $\bar{1}$...	a=9.60Å α=91°42' b=9.62Å β=91°48' c=14.46Å γ=120°5' Z=2			Am.Min.,1959,44,1020-1025; Min.Abs.,86M/4306;Pov.,626; Str.Tab.,249;RRW,546;Hölzel, 109.
SERGEEVITE	$Ca_2Mg_{11}(CO_3)_4(HCO_3)_4(OH)_4.6H_2O$		Trig. ?	a=19.01Å Z=3 c=7.82Å			Am.Min.,1981,66,1100(Abs.); Hölzel,106.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
SHUISKITE	$Ca_2MgCr_2(SiO_4)(Si_2O_7)(OH)_2.H_2O$	$Ca_2^{[7]}\{3\infty\}[Mg^oCr_2^o Si^iO_4Si_2^iO_7(OH)_2(H_2O)]$ (=Pumpellyite)	Mon. A2/m	a=8.897Å β=98° b=5.843Å Z=4 c=19.41Å			Am.Min.,1982,67,860(Abs.); Hölzel,203.
STEENSTRUPINE - (Ce)	$Na_{14}Ce_6Mn_2Fe_2Zr(PO_4)_7Si_{12}O_{36}(OH)_2.3H_2O$		Trig. R $\bar{3}$m	a=10.46Å c=45.479Å Z=3			Am.Min.,1984,69,215(Abs.); Str.Tab.,380;Pov.,370;RRW, 577.
TATARSKITE	$Ca_6Mg_2(SO_4)_2(CO_3)_2Cl_4(OH)_4.7H_2O$		?	?			Am.Min.,1964,49,1151(Abs.); Hölzel,137;Str.Tab.,296;Pov., 600.
VISÉITE	$Ca_{10}Al_{24}(PO_4)_{14}(SiO_4)_6F_3O_{13}.72H_2O$	$Ca_{10}Al_{24}(PO_4)_{14}F_3O_{13}(H_2O)_{72}\{3\infty\}[Si_6^tO_{24}]$ (≈Analcime,Zeolite)	Cub. ?	a=13.65Å Z=1?			Min.Mag.,1977,41437-442; RRW,654;Pov.,532;Str.Tab., 472;Hölzel,243;Gottardi & Galli,1985,76;LF,293.
XIANGJIANGITE	$(Fe,Al)(UO_2)_4(PO_4)_2(SO_4)_2(OH).22H_2O$		Tet. ?	a=7.17Å Z=1 c=22.22Å			Am.Min.,1979,64,466(Abs.). K/B,176;Hölzel,179;

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
ABELSONITE	$NiC_{31}H_{32}N_4$	{g}[$NiC_{31}H_{32}N_4$]	Tric. P1...	a=8.44Å α=90°53' b=11.12Å β=113°45' c=7.28Å γ=79°34' Z=1			Am.Min.,1978,63,930-937; Hölzel,250.
ACETAMIDE	CH_3CONH_2	{g}[$C^{IV}O(CH_3)(NH_2)$]	Hex. R3c	a=11.40Å Z=? c=13.50Å			Am.Min.,1976,61,338(Abs.); Hölzel,249Encyc.Miner.Nam.,9
AMBER	|C,H,O|		Amorph.	-			Str.Tab.,498;RRW,17.
CALCLACITE	$Ca(CH_3COO)Cl$ $.5H_2O$	{g}[$Ca(CH_3COO)Cl$ $(H_2O)_5$]	Mon. $P2_1/a$	a=10.51Å β=99°6' b=13.72Å Z=4 c=6.82Å			Acta Cryst.,1958,11,745-746; Hölzel,248;RRW,102.
EARLANDITE	$Ca_3(C_6H_5O_7)_2.4H_2O$		Mon. ?	?			Str.Tab.,495;Hölzel,248;RRW, 184.
EVENKITE	$C_{24}H_{50}$		Mon. $P2_1/a$	a=7.50Å β=94° b=4.99Å Z=2 c=32.7Å			Am.Min.,1965,50,2109(Abs.); RRW,201;Str.Tab.,496;Hölzel, 249.
FICHTELITE	$C_{19}H_{34}$	{g}[$C_{19}H_{34}$]	Mon. $P2_1$	a=10.706Å β=105.85° b=7.458Å Z=2 c=10.824Å	$C_{I\text{-}XIX}$(2a) $H_{I\text{-}XXXIII}$(2a)		Can.Min.,1995,33,711;Str.Tab. ,496;RRW,214;Hölzel,249.
FLAGSTAFFITE	$C_{10}H_{22}O_3$		Orth. Fdd2	a=18.60Å Z=16 b=23.00Å c=10.86Å			Am.Min.,1965,50,2109(Abs.); Str.Tab.,496;RRW,215;Hölzel, 249.
GLUSHINSKITE	$MgC_2O_4.2H_2O$		Mon. C2/c	a=12.675Å β=129.45° b=5.406Å Z=4 c=9.984Å			Min.Mag.,1980,43,837-340; Hölzel,248;Am.Min.,1981,66, 439(Abs.).
GUANINE	$C_5H_3(NH_2)N_4O$		Mon. $P2_1/n$	?			Encyc.Miner.Nam.,120;Min. Mag.,1974,39,889-890;Hölzel, 250.
HARTITE	$C_{20}H_{34}$	{g}[$C_{20}H_{34}$]	Tric. $P\bar{1}$	a=21.10Å α=103°11' b=11.54Å β=92°59' c=7.50Å γ=80°35' Z=4			Str.Tab.,496;Hölzel,249;Acta Cryst.,1978,B34,1311-1316.
HOELITE	$C_{14}H_8O_2$		Mon. $P2_1/a$	a=15.81Å β=102°67' b=3.967Å Z=2 c=7.876Å			Hölzel,249.
HUMBOLDTINE	$FeC_2O_4.2H_2O$	{1∞}[$C_2O_4Fe(H_2O)_2$]	Mon. C2/c	a=12.04Å β=127°34' b=5.58Å Z=4 c=9.89Å	Fe(4e)C(8f) $O_{I\text{-}III}$(8f)		SR,21,505-506; Hölzel,248;Str. Tab.,494;RRW,283-284.
IDRIALITE	$C_{22}H_{14}$		Orth. (?)	a=8.07Å Z=4 b=6.42Å c=27.75Å			Str.Tab.,497;Am.Min.,1965,50, 2109-2110(Abs.);Hölzel,249; RRW,296.

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
KARPATITE	$C_{24}H_{12}$		Mon. P2/c	a=16.25Å β=111°10' b=4.638Å Z=2 c=10.42Å			Am.Min.,1969,54,329(Abs.); RRW,119;Str.Tab.,496;Hölzel, 250.
KLADNOITE	$C_6H_4(CO)_2NH$	{g}[$C_6H_4(CO)_2NH$]	Mon. $P2_1/n$	a=22.83Å β=91°36' b=7.651Å Z=4 c=3.810Å	C_{I-VIII}(4e)N(4e) O_{I-II}(4e)H_{I-V}(4e)		Acta Cryst.,1972,B28,415-418; Hölzel,249.
KRATOCHVÍLITE	$C_{13}H_{10}$	{g}[$C_{13}H_{10}$]	Orth. Pnam	a=8.49Å Z=4 b=5.721Å c=18.97Å	C_{I-VI}(8d)C_{VII}(4c)		SR,19,583-584;Hölzel,249;Str. Tab.,496;Miner.Refer.Manual, 245.
MELLITE	$Al_2C_6(COO)_6$. $16H_2O$	$Al_2^{o}(H_2O)_{16}$ {g}[$C_6(COO)_6$]	Tet. $P4_1/acd$	a=15.53Å Z=8 c=23.19Å	Al(16e)O_{I-II}(16e) $O_{III-VIII}$(32g) C_{I-IV}(32g)		Acta Cryst.,1973,B29,26-31; RRW,390-391;Str.Tab.,495; Hölzel,249.
MINGUZZITE	$K_3Fe(C_2O_4)_3.3H_2O$		Mon. ?	? β=94°13.5'			RRW,407-408;Str.Tab.,494; Hölzel,248;Am.Min.,1956,41, 370(Abs.)
MOOLOOITE	$CuC_2O_4.nH_2O$		Orth. ?	a=5.35Å Z=1 b=5.63Å c=2.56Å			Min.Mag.,1986,50,295-298; Hölzel,248.
OXAMMITE	$(NH_4)_2C_2O_4.H_2O$		Orth. $P2_12_12$	a=8.035Å Z=2 b=10.309Å c=3.795Å			Acta Cryst.,1972,B28,3340-3351;RRW,454;Str.Tab.,494; Hölzel,248;
PHYLLORETINE	$C_{18}H_{18}$		Orth. Pnn2	a=6.26Å Z=4 b=8.52Å c=23.45Å			Str.Tab.,496;Hölzel,249.
REFIKITE	$C_{20}H_{32}O_2$		Orth. $P2_12_12$	a=10.43Å Z=4 b=22.35Å c=7.98Å			Am.Min.,1965,50,2109-2110 (Abs.);RRW,513;Str.Tab.,497; Hölzel,248.
SIMONELLITE	$C_{19}H_{24}$		Orth. Pnaa	a=9.231Å Z=8 b=9.134Å c=36.01Å			Am.Min.,1970,55,1818(Abs.); Str.Tab.,496;Hölzel,249.
STEPANOVITE	$NaMgFe(C_2O_4)_3$ $.8\text{-}9H_2O$		Trig. ?	a=9.28Å Z=6 c=36.67Å			Am.Min.,1964,49,442-443 (Abs.);Str.Tab.,495;RRW,578;
UREA	$CO(NH_2)_2$	{g}[$C^{tr}O(NH_2)_2$]	Tet. $P\bar{4}2_1m$	a=5.646Å Z=2 c=4.701Å		{g}[$C^{tr}O(NH_2)_2$] UREA	Min.Mag.,1973,39,346-348; Hölzel,249;Kitaigorodskii,1961, 153-154.
URICITE	$C_5H_4N_4O_3$	{g}[$C_5H_4N_4O_3$]	Mon. $P2_1a$	a=14.464Å β=65.10° b=7.403Å Z=4 c=6.208Å			Acta Cryst.,1965,19,286-287; Hölzel,250.
WEDDELLITE	$CaC_2O_4.2H_2O$	$(H_2O)_2Ca$ {g}[C_2O_4]	Tet. I4/m	a=12.37Å Z=8 c=7.357Å	Ca(8h)C(16i) O_{I-II}(16i)...		Am.Min.,1980,65,327-334;Acta Cryst.,1965,18,917-921;Hölzel, 248.

ORGANIC MINERALS (cont.)

NAME	CHEMICAL FORMULA	STRUCTURAL FORMULA	SPACE GROUP	UNIT CELL DIMENSIONS	EQUIVALENT POSITIONS	STRUCTURE TYPE	REFERENCES
WHEATLEYITE	$Na_2Cu(C_2O_4)_2$ $.2H_2O$		(Tric.) $P\bar{1}$	a=7.559Å α=76.65° b=9.665Å β=103.67° c=3.589Å γ=109.10° Z=1	Cu(1a)Na(2i) $O_{I-V}(2i)C_{I-II}(2i)$		Am.Min.,1986,71,1240-1242; Acta Cryst.,1980,B36,2145-2147; Hölzel,248.
WHEWELLITE	$CaC_2O_4.H_2O$		Mon. $P2_1/c$	a=6.290Å β=109.46° b=14.583Å Z=8 c=10.116Å	$Ca_{I-II}(4e)$ $C_{I-IV}(4e)$ $O_{I-VIII}(4e)$...		Am.Min.,1980,65,327-334;Am. Min.,1968,53,455-463;Hölzel, 248;RRW,669;Str.Tab.,494.
ZHEMCHUZHNI-KOVITE	$NaMg(Al,Fe)$ $(C_2O_4)_3.8H_2O$		Trig.	a=16.67Å Z=6 c=12.51Å			Am.Min.,1964,49,442-443 (Abs.);RRW,686;Str.Tab.,495; Hölzel,248.

Tables of mineral structure types

Table 64S

$A_mB_n.nAq.$

MINERALS TENTATIVELY CLASSIFIED

AKDALAITE $Al_8^{o}[O_{12}(H_2O)]^{h}$ $P6_122$ ...
ANTARCTICITE $Ca^{o}[(H_2O)_6Cl_2]$ P321
BISCHOFITE $Mg^{[6/8]}[(H_2O)_6Cl_2]$ C2/m
CHLORALUMINITE $Al^{o}[Cl_3(H_2O)_6]$ R $\bar{3}$c
ERIOCHALCITE $Al^{o}[Cl_2(H_2O)_2]^{Qs}$ Pbmn
NICKELBISCHOFITE $Ni^{[7/8]}[(H_2O)_6Cl_2]$ C2/m
SCHOEPITE $U^{[7]}[O_3(H_2O)_{12}]$ $P2_1ca$
SIDWILLITE $Mo^{o}[O_3(H_2O)_2]^{c?}$ $P2_1/n$

MINERALS NOT YET CLASSIFIED

ANTHONYITE $Cu(OH,Cl)_2.3H_2O$ Mon. s.g.?
BARIANDITE $V_5O_{12}.6H_2O$ Cc ...
CALUMETITE $Cu(OH,Cl)_2.2H_2O$ S.?
LENOBLITE $V_2O_4.2H_2O$ S.?
MASUYITE $UO_3.2H_2O$ Pcna
METASCHOEPITE $UO_3.1\text{-}2H_2O$ Pbna
METASTUDTITE $UO_4.2H_2O$ Immm
MEYMACITE $WO_3.2H_2O$ Amorph.
NAVAJOITE $V_2O_5.3H_2O$ Mon. s.g.?
OPAL $SiO_2.nH_2O$ Amorph.
ROKHÜNITE $FeCl_2.2H_2O$ C2/m
SILHYDRITE $Si_3O_6.H_2O$ Orth. s.g.?
SINJARITE $CaCl_2.2H_2O$ Tet. s.g.?
STUDTITE $UO_4.4H_2O$ C2 ...
TUNGSTITE $WO_3.H_2O$ Pmnb

$A_pB_qC_r.nAq.$

CLOSE-PACKED

MANJIROITE $Mn_8^{o}[(Na,K)O_{16}(H_2O)_n]^{chh}$ I 4/m (Dist.d.Hollandite)

GROUP

NATRON [{g}$[Na_2^{o}(H_2O)_{10}]$ {g}$[C^{tr}O_3]^{c}$] Cc

SHEET

GYPSUM $2\infty[Ca^{[6+2]}(H_2O)_2S^{t}O_4]$ I 2/a

Deriv.: CHURCHITE - (Nd) $2\infty[Nd^{[8+2]}(H_2O)_2P^{t}O_4]$ A2/a...
CHURCHITE - (Y) $2\infty[(Y,Er)^{[8+2]}(H_2O)_2P^{t}O_4]$ A2/a

FRAMEWORK

KIESERITE $3\infty[Mg^{o}S^{t}O_4(H_2O)]$ C2/c

Deriv.: GUNNINGITE $3\infty[(Zn,Mn)^{o}S^{t}O_4(H_2O)]$ A2/a
POITEVINITE $\{3\infty\}[(Cu,Fe,Zn)^{o}S^{t}O_4(H_2O)]$ P $\bar{1}$
SZMIKITE $\{3\infty\}[Mn^{o}S^{t}O_4(H_2O)]$ A2/a
SZOMOLNOKITE $3\infty\}[Fe^{o}S^{t}O_4(H_2O)]$ A2/a

VARISCITE $(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ Pbca
(Basic str.Metavariscite)

Pop.: MANSFIELDITE $(H_2O)_2\{3\infty\}[Al^{o}As^{t}O_4]$
SCORODITE $(H_2O)_2\{3\infty\}[Fe^{o}As^{t}O_4]$
STRENGITE $(H_2O)_2\{3\infty\}[Fe^{o}P^{t}O_4]$

Deriv.: KOLBECKITE $(H_2O)_2\{3\infty\}[Sc^{o}P^{t}O_4]$ $P2_1/m$
METAVARISCITE $(H_2O)_2\{3\infty\}[Al^{o}P^{t}O_4]$ $P2_1/n$
PHOSPHOSIDERITE $(H_2O)_2\{3\infty\}[Fe^{o}P^{t}O_4]$ $P2_1/n$

Table 65S

$A_pB_qC_r.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED

AHFELDITE $Ni^{[4+2]}Se^{[3n]}[O_3(H_2O)_2]$ $P2_1/n$(=Cobaltomenite)
ALUNOGEN $Al_2^{o}(H_2O)_{17}\{g\}[S^{t}O_4]_3$ $P\bar{1}$
APLOWITE $(Co,Mn,Ni)^{o}S^{t}[O_4(H_2O)_4]$ $P2_1/n$
ARAVAIPAITE $Pb_3Al^{o}[F_9(H_2O)]$ P1 ...
BARNESITE $Na_2^{[4+2]}V_6^{[5by]}[O_{16}(H_2O)_3]$ P2/m
BARRERITE $(Na,K,Ca)_5^{[8]}(H_2O)_{17}\{3\infty\}[(Si,Al)_{24}{}^{t}O_{48}]$ Amma (≈Stilbite,Zeolite)
BELINGERITE $\{3\infty\}[Cu^{o}{}_3\{g\}[I^{[3n]}O_3]_6(H_2O_2]$ $P\bar{1}$
BIANCHITE $(Zn,Fe)^{o}S^{t}[O_4(H_2O)_6]$ C2/c (=Hexahydrite)
BIEBERITE $Co^{o}S^{t}[O_4(H_2O)_7]$ $P2_1/c$
BONATITE $\{2\infty\}[Cu^{o}S^{t}O_4(H_2O)_3]$ Cc
BOOTHITE $Cu^{o}S^{t}[O_4(H_2O)]_7$ $P2_1/c$
BROCKITE $(Ca,Th,Ce)^{[8]}P^{t}[O_4(H_2O)]$ P622 (=Rhabdophane-(Ce))
CARNALLITE $K^{o}Mg^{o}[Cl_3(H_2O)_6]$ Pnna
CHALCANTHITE $(H_2O)\{1\infty\}[Cu^{o}S^{t}O_4(H_2O)_4]$ $P\bar{1}$ (=Pentahydrite)
CHALCOMENITE $Cu^{o}Se^{[3n]}[O_3(H_2O)_2]$ $P2_12_12_1$ (=Teineite, ≈Ahlfeldite)
CHALCOPHANITE $(Zn,Fe,Mn)^{o}Mn_3^{o}[O_7(H_2O)_3]$ $R\bar{3}$
CLARINGBULLITE $Cu^{o}Cu_3^{p}[(OH)_7Cl(H_2O)_n]$ $P6_3/mmc$ (=Ahlfeldite)
COBALTOMENITE $Co^{o}Se^{[3n]}[O_3(H_2O)_2]$ $P2_1/n$(=Ahlfeldite)
COQUIMBITE $(H_2O)_6\{g\}[Fe_3^{o}S_6{}^{t}O_{24}(H_2O)_6\{g\}[Fe^{o}(H_2O)_6]$ $P\bar{3}1c$
COYOTEITE $Na^{tr}Fe_3^{tr}[S_5(H_2O)_2]^{n}$ P1...(Subs.def.d.Wurtzite)
CUPROTUNGSTITE $Cu_3^{o}W_2^{t}[O_3(H_2O)_2]$ $P4_12_12$... (≈Lindgrenite)
CYMRITE $Ba^{[8]}\{2\infty\}[(Si,Al)_4{}^{t}O_8(H_2O)]$ $P2_1$
DACAHIARDITE $(Na,K,Ca_{0.5})_4(H_2O)_{18}\{3\infty\}[Al_4{}^{t}Si_{20}{}^{t}O_{48}]$ C2/m (Zeolite)
DIOPTASE $Cu_6^{[4+2]}[(H_2O)_6\{g\}[Si_6{}^{t}O_{18}]]$ $R\bar{3}$
DWORNIKITE $3\infty[(Ni,Fe)^{o}(H_2O)S^{t}O_4]$ C2/c (=Kieserite)
EMMONSITE $Fe_2^{o}Te_3^{[5by]}[O_9(H_2O)_2]$ $P\bar{1}$ (≈Mackayite)
EPSOMITE $Mg^{o}S^{t}[O_4(H_2O)_7]$ $P2_12_12_1$
ERDITE $Na^{[6]}Fe^{t}[S_2(H_2O)_2]$ C2/c ...
ERYTHROSIDERITE $Fe^{o}[Cl_5K_2(H_2O)]$ Pnma
FERRIERITE (Orthorhombic) $(Mg,K,Ca)_{4.4}{}^{o}(H_2O)_{18}\{3\infty\}[(Si,Al)_{36}{}^{t}O_{72}]$ Pnnm (≈Mordenite,Zeolite)
FERRITUNGSTITE $(K,Ca)_{0.2}{}^{cb}\square_{0.8}{}^{cb}(W,Fe)_2^{[6]}[(O,OH)_6(H_2O)\square]^{Qs}$ Fd $\bar{3}$m (Defect deriv. Pyrochlore)
FERROHEXAHYDRITE $Fe^{o}S^{t}[O_4(H_2O)_6]$ C2/c
GERSTLEYITE $Na_2^{[4+2]}\{1\infty\}[(Sb,As)_8^{[3n]}S_{13}(H_2O)_2]$ Cm
GONNARDITE $(Na,Ca)_2^{o}(H_2O)_3\{3\infty\}[(Si,Al)_5{}^{t}O_{10}]$ Tet. s.g.? (≈Natrolite,Zeolite)
GOSLARITE $Zn^{o}S^{t}[O_4(H_2O)_7]$ $P2_12_12_1$ (=Epsomite)
HEWETTITE $Ca^{[7/8]}V_6^{o}[O_{16}(H_2O)_9]$ $P2_1/m$
HEXAHYDRITE $Mg^{o}S^{t}[O_4(H_2O)_6]$ C2/c
HEXAHYDROBORITE $Ca^{[8]}B_2{}^{t}[(OH)_8(H_2O)_2]$ P2/a
HOPEITE $Zn^{o}Zn_2^{t}P_2^{t}[O_8(H_2O)_4]$ Pnma (≈Vivianite)
HYDROTUNGSTITE $W^{o}[O_2(OH)_2(H_2O)]$ P2/m
IKAITE $Ca^{[8]}(H_2O)_6\{g\}[C^{tr}O_3]$ C2/c
ILESITE $(Mn,Zn,Fe)^{o}S^{t}[O_4(H_2O)_4]$ $P2_1/n$
KILLALAITE $Ca_2^{o}Ca^{[7]}Si_2^{t}[O_7(H_2O)]$ $P2_1/m$
KLEINITE $(Cl,SO_4)_n(H_2O)\{3\infty\}[N^{t}Mg_2^{[2]\langle ch\rangle}]^{n}$ $P6_3/mmc$ (≈β-Tridymite)
KONINCKITE $(H_2O)_3\{3\infty\}[Fe^{o}P^{t}O_4]$ Tet. s.g.? (≈Scorodite)
KORNELITE $(H_2O)\{3\infty\}[Fe_2^{o}S_3{}^{t}O_{12}(H_2O)_6]$ P21/n
KRAUSKOPFITE $Ba^{[9]}\{1\infty\}[Si_2{}^{t}O_5(H_2O)_3]$ $P2_1/c$
KREMERSITE $Fe^{o}[Cl_5(NH_4,K)_2(H_2O)]$ Pnma
LANTHANITE - (Ce) $(H_2O)_8\{2\infty\}[(Ce,La,Nd)_2^{[10]}\{g\}[C^{t}O_3]_3]$ Pbnb
LANTHANITE - (La) $(H_2O)_8\{2\infty\}[(La,Ce)_2^{[10]}\{g\}[C^{t}O_3]_3$ Pbnb
LANTHANITE - (Nd) $(H_2O)_8\{2\infty\}[(Nd,La)_2^{[10]}\{g\}[C^{t}O_3]_3$ Pbnb
LUDLAMITE $(Fe,Mg,Mn)_3^{o}P_2^{t}[O_8(H_2O)_4]$ $P2_1/a$ (≈Vivianite)
MALLARDITE $Mn^{o}S^{t}[O_4(H_2O)_7]$ $P2_1/c$ (≈Melanterite)
MELANTERITE $Fe^{o}S^{t}[O_4(H_2O)_7]$ $P2_1/c$
METAHEWETTITE $Ca^{o}V_6^{[5by]}[O_{16}(H_2O)_3]$ A2/m (≈Barnesite)
METAKÖTTIGITE $(Zn,Fe)_3^{o}As_2^{t}[O_8(H_2O,OH)_8]$ $P\bar{1}$ (≈Symplesite)
METAROSSITE $Ca^{acb}V_2^{[5by]}[O_6(H_2O)_2]$ $P\bar{1}$ ...
METASWITZERITE $(Mn,Fe)_3^{o}P_2^{t}[O_8(H_2O)_4]$ $P2_1/c$ (≈Ludlamite)
MIRABILITE $Na_2^{o}S^{t}[O_4(H_2O)_{10}]$ $P2_1/c$
MITSCHERLICHITE $Cu^{o}[K_2^{cb}Cl_4(H_2O)_2]$ $P4_2/mnm$
MOORHOUSEITE $(Co,Ni,Mn)^{o}S^{t}[O_4(H_2O)_6]$ C2/c (=Hexahydrite)
MORENOSITE $Ni^{o}S^{t}[O_4(H_2O)_7]$ $P2_12_12_1$ (=Epsomite)
MOUNTAINITE $(Ca,Na_2,K_2)_2^{[6]}(H_2O)_3\{2\infty\}[Si_4{}^{t}O_{10}]$ P2/c
NEKOITE $Ca_3^{o}(H_2O)_7\{2\infty\}[Si_6{}^{t}O_{15}]$ P1
NESQUEHONITE $Mg^{o}(H_2O)_3\{g\}[C^{tr}O_3]$ $P2_1/n$
NICKELHEXAHYDRITE $(Ni,Mg,Fe)^{o}S^{t}[O_4(H_2O)_6]$ C2/c (=Hexahydrite)
NITROMAGNESITE $Mg^{o}(H_2O)_6\{g\}[N^{tr}O_3]_2$ $P2_1/c$
OKENITE $Ca_{10}^{o}(H_2O)_{18}O\{2\infty\}[Si_6{}^{t}O_{15}]_3$ $P\bar{1}$ (≈Nekoite)
PARACOQUIMBITE $Fe^{o}S_3^{t}[O_{12}(H_2O)_9]$ $R\bar{3}$
PARAHOPEITE $Zn^{o}Zn_2^{t}P_2^{t}[O_8(H_2O)_4]$ $P\bar{1}$ (Dist.d.Hopeite)
PASCOITE $Ca_3^{[7]}V_{10}^{o}[O_{28}(H_2O)_{17}]$ I 2 ...
PAULINGITE $(K,Ca,Na,Ba)_{12}(H_2O)_{25}\{3\infty\}[(Si,Al)_{24}{}^{t}O_{98}]$ I m3m (≈Sodalite,Zeolite)
PENTAHYDRITE $Mg^{o}S^{t}[O_4(H_2O)_5]$ $P\bar{1}$ (≈Chalcanthite)
PHAUNOUXITE $\{2\infty\}[Ca^{[8]}Ca_2^{[7]}As_2^{t}O_8(H_2O)_{11}]$ $P\bar{1}$ (≈Rauenthalite)
PHOSPHOFERRITE $(Fe,Mn)_3^{o}P_2^{t}(O_8(H_2O)_3]$ Pbna (≈Reddingite)
QUENSTEDTITE $Fe_2^{o}S_3^{t}[O_{12}(H_2O)_{11}]$ $P\bar{1}$
RALSTONITE $(Al,Mg)_2^{cb}Na_{0.4}^{[6]}\square_{1.6}^{[6]}[(F,OH)_6(H_2O)\square]^{Qs}$ (Defect.d.Pyrochlore)
RAUENTHALITE $Ca^{[8]}Ca_2^{[7]}As_2^{t}[O_8(H_2O)_{10}]$ $P\bar{1}$ (≈Phaunouxite)
REDDINGITE $Mn_3^{o}P_2^{t}[O_8(H_2O)_3]$ Pbna (≈Phosphoferrite)
RETGERSITE $Ni^{o}S^{t}[O_4(H_2O)_6]$ $P4_12_12$ (=Hexahydrite)
REVDITE $3\infty[Na_2^{o}Si_2^{t}O_5(H_2O)_5]$ C2 (≈Vlasovite)
RHABDOPHANE - (Ce) $(Ce,La)^{[8]}P^{t}[(O_4(H_2O)]$ $P6_222$
RHABDOPHANE - (La) $(La,Ce)^{[8]}P^{t}[(O_4(H_2O)]$ $P6_222$
RHABDOPHANE - (Nd) $(Nd,Ce,La)^{[8]}P^{t}[(O_4(H_2O)]$ $P6_222$
RÖMERITE $[\{g\}[Fe^{o}S_2{}^{t}O_8(H_2O)_4]_2\{g\}[Fe^{o}(H_2O)_6]$ $P\bar{1}$
ROSSITE $3\infty[Ca^{[8]}V_2^{[5]}O_6(H_2O)_4]$ $P\bar{1}$
ROZENITE $Fe^{o}S^{t}[O_4(H_2O)_4]$ $P2_1/n$ (=Laumontite)
SIDEROTIL $(Fe,Cu)^{o}S^{t}[O_4(H_2O)_5]$ $P\bar{1}$ (=Chalcanthite)
STARKEYITE $\{g\}[Mg_2^{o}S_2{}^{t}O_8(H_2O)_8]$ $P2_1/n$
STRACZEKITE $V_8^{o}[O_{20}(H_2O)_3(Ca,K,Ba)]$ C2/m
SVETLOZARITE $(Ca;K,Na)_3\{3\infty\}[(H_2O)_{12}(Si,Al)_{24}O_{48}]$ Ccma?(≈Dachiardite)
SWITZERITE $(Mn,Fe)_3^{o}P_2^{t}[O_8(H_2O)_7]$ $P2_1/a$

Table 66S

$A_pB_qC_r.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED (cont.)

TACHYHYDRITE $Ca^{o}Mg_2^{o}[Cl_6(H_2O)_{12}]$ R $\bar{3}$(≈Carnalite)
TEINEITE $Cu^{[b]}Te^{[3n]}[O_3.(H_2O)_2]P2_12_12_1$(=Chalcomenite)
TENGERITE-(Y) $2\infty[Y_2^{[9]}\{g\}[C^{tr}O_3]_3(H_2O)_2]$ $P2_12_12_1$ (≈Kimuraite)
TETRANATROLITE $(Na,K)_2^{o}(H_2O)_2\{3\infty\}[(Si,Al)_5^{t}O_{10}]$ (≈Natrolite,Zeolite)
THERMONATRITE $Na^{[6]}Na^{[5by]}(H_2O)\{g\}[C^{tr}O_3]$ $P2_1ab$
TODOROKITE $(Mn,Mg,Al)_6^{o}[(Na,Ca,K,Ba,Sr)_{1-x}O_{12}(H_2O)_{3-4}]^{c/h}$ P2/m (≈Hollandite)
TRISTRAMITE $(Ca,U,Fe)^{[8]}(P,S)^{t}[O_4(H_2O)]$ $P6_222$ (=Rhaudophane - (Ce))
VIVIANITE $Fe_3^{o}P_2^{t}[O_8(H_2O)_8]$ C2/m

Pop.: ANNABERGITE $Ni_3^{o}As_2^{t}[O_8(H_2O)_8]$
BARICITE $(Mg,Fe)_3^{o}P_2^{t}[O_8(H_2O)_8]$
ERYTHRITE $Co_3^{o}As_2^{t}[O_8(H_2O)_8]$
HÖRNESITE $Mg_3^{o}As_2^{t}[O_8(H_2O)_8]$
KÖTTIGITE $Mg_3^{o}As_2^{t}[O_8(H_2O)_8]$
PARASYMPLESITE $Fe_3^{o}As_2^{t}[O_8(H_2O)_8]$
SYMPLESITE $Fe_3^{o}As_2^{t}[O_8(H_2O)_8]$
Deriv.: BOBIERRITE $Mg_3^{o}P_2^{t}[O_8(H_2O)_8]$ C2/c
MANGANESEHÖRNESITE $(Mn,Mg)_3^{o}As_2^{t}[O_8(H_2O)_8]$ $P2_1/c$

WARIKAHNITE $3\infty[Zn_3^{[4/5/6]}As_2^{t}O_8(H_2O)_2]$ P $\bar{1}$
ZINCMELANTERITE $(Zn,Cu,Fe)^{o}S^{t}[O_4(H_2O)_7]$ $P2_1/c$

MINERALS NOT YET CLASSIFIED

ADMONTITE $Mg_2B_{12}O_{20}.15H_2O$ $P2_1/c$
APACHITE $Cu_9Si_{10}O_{29}.11H_2O$ Mon. s.g.?
AURORITE $(Mn,Ag,Ca)Mn_3O_7.3H_2O$ P $\bar{1}$ ...
BASSANITE $CaSO_4.0.5H_2O$ A2
BAURANOITE $BaU_2O_7.4\text{-}5H_2O$ S.?
BILINITE $Fe_3(SO_4)_4.22H_2O$ P2 ?
BOYLEITE $(Zn,Mg)SO_4.4H_2O$ $P2_1/n$
BRÜGGENITE $Ca(IO_3)_2.H_2O$ $P2_1/c$
CADWALADERITE $AlCl(OH)_2.4H_2O$ Amorph.
CALCIOURANOITE $(Ca,Ba,Pb,K,Na)U_2O_7.5H_2O$ S.?
CALKINSITE - (Ce) $(Ce,La)_2(CO_3)_3.4H_2O$ $P2_122_1$
CARLHINTZEITE $Ca_2AlF_7.H_2O$ C $\bar{1}$...
CHVALETICEITE $(Mn,Mg)SO_4.6H_2O$ C2/c
CLINOCHALCOMENITE $CuSeO_3.2H_2O$ $P2_1/n$
CUZTICITE $Fe_2TeO_6.3H_2O$ Hex. s.g.?
FERRIMOLYBDITE $Fe(MoO_4)_3.7H_2O$ Pmmn
FERVANITE $Fe_4(VO_4)_4.5H_2O$ Mon. s.g.?
FRANCONITE $Na_2Nb_4O_{11}.9H_2O$ Mon. s.g.?
GEARKSUTITE $CaAl(F,OH)_5.H_2O$ S.?
GERASIMOVSKITE $(Mn,Ca)(Nb,Ti)_5O_{12}.9H_2O$ Amorph.
GILALITE $Cu_5Si_6O_{17}.7H_2O$ Mon. s.g.?
GINORITE $Ca_2B_{14}O_{23}.8H_2O$ $P2_1/a$
GRAEMITE $CuTeO_3.H_2O$ Pcmm
HANNEBACHITE $CaSO_3.0.5H_2O$ Pbna
HELLYERITE $NiCO_3.6H_2O$ C2/c
HENDERSONITE $Ca_2V_9O_{24}.8H_2O$ Pnam ...
HILLEBRANDITE $Ca_2SiO_4.H_2O$ $Cmc2_1$
HOCHELAGAITE $(Ca,Na,Sr)Nb_4O_{11}.8H_2O$ Mon. s.g.?
JOKOKUITE $MnSO_4.5H_2O$ P $\bar{1}$
KAATIALAITE $FeAs_3O_9.6\text{-}8H_2O$ $P2_1$ ...
KANKITE $FeAsO_4.3.5H_2O$ Mon. s.g?
KORSHUNOVSKITE $Mg_2Cl(OH)_3.3.5\text{-}4H_2O$ Tric. s.g.?
LANSFORDITE $MgCO_3.5H_2O$ $P2_1/m$
LAUSENITE $Fe_2(SO_4)_3.6H_2O$ Mon. s.g.?
MANDARINOITE $Fe_2(SeO_3)_3.6H_2O$ $P2_1/c$
MANGANBELYANKINITE $(Mn,Ca)(Ti,Nb)_5O_{12}.9H_2O$ Amorph.
MEIXNERITE $Mg_6Al_2(OH)_{18}.4H_2O$ R $\bar{3}$m
●**MELANOVANADITE** $CaV_4O_{10}.5H_2O$ P $\bar{1}$
META-ALUNOGEN $Al_2(SO_4)_3.14H_2O$ Orth. s.g.?
METACALCIOURANOITE $(Ca,Na,Ba)U_2O_7.2H_2O$ s.g.?
METASCHODERITE $Al(PO_4,VO_4).3H_2O$ P2/m
METAVANDENDRIESSCHEITE $PbU_7O_{22}.nH_2O$ Pmma ?
MONOHYDROCALCITE $CaCO_3.H_2O$ $P3_121$ ...
MUNIRITE $NaVO_3.1.9H_2O$ $P2_1/a$
MUSKOXITE $Mg_7Fe_4O_{13}.10H_2O$ Trig. s.g.?
NEOTOCITE $(Mn,Fe)SiO_3.H_2O$ Amorph.
NINGYOITE $(U,Ca,Ce)_2(PO_4)_2.1\text{-}2H_2O$ P222 ...
●**NITROCALCITE** $Ca(NO_3)_2.4H_2O$ $P2_1/c$
ORICKITE $CuFeS_2.nH_2O$ Hex. s.g.?
RANCIÉITE $(Ca,Mn)Mn_4O_9.3H_2O$ Hex. S.g.?
RICHETITE $PbU_4O_{13}.4H_2O$ P1 ...
SCHIEFFELINITE $Pb(Te,S)O_4.H_2O$ Cmcm
SCHÖLLHORNITE $Na_{0.3}CrS_2.H_2O$ R3m ...
SCHUBNELITE $FeVO_4.H_2O$ P $\bar{1}$
SIMONKOLLEITE $Zn_5(OH)_8Cl_2.H_2O$ R $\bar{3}$m
SIMPLOTITE $CaV_4O_9.5H_2O$ A2/m ...
STEIGERITE $AlVO_4.3H_2O$ $P2_1/m$ ...
STERLINGHILLITE $Mn_3(AsO_4)_2.4H_2O$ S.?
TAKANELITE $(Mn,Ca)Mn_4O_9.H_2O$ Hex. s.g.?
TERTSCHITE $Ca_4B_{10}O_{19}.20H_2O$ Mon. s.g.?
TRABZONITE $Ca_4Si_3O_{10}.2H_2O$ $P2_1$ ...
URANOSPHAERITE $Bi_2U_2O_9.3H_2O$ Orth. s.g.?
VANDENDRIESSCHEITE $PbU_7O_{22}.12H_2O$ Pmma ...
WÖLSENDORFITE $(Pb,Ca)U_2O_7.2H_2O$ C222
WOODRUFFITE $(Zn,Mn)Mn_3O_7.1\text{-}2H_2O$ P $\bar{4}$
ZIRCOSULFATE $Zr(SO_4)_2.4H_2O$ Fddd

Table 67S

$A_pB_qC_rD_s.nAq.$

CLOSE-PACKED

CLINOHEDRITE $Ca^{o}Zn^{t}Si^{t}[O_4(H_2O)]^{c}$ Cc
JUNITOITE $Ca^{o}Zn^{t}Si_2^{t}[O_7(H_2O)]^{c}$ Ama2

CHAIN

BORAX $\{g\}[B_2^{tr}B_2^{t}O_5(OH)_4]\{1\infty\}[Na_2^{o}(H_2O)_8]$ C2/c
COLEMANITE $Ca^{[7]}(H_2O)\{1\infty\}[B^{tr}B_2^{t}O_4(OH)_3]^{my}$ $P2_1/a$

SHEET

HALLOYSITE - 10 Å $(H_2O)_2\{2\infty\}[Al_2^{o}(OH)_4\{2\infty\}[Si_2^{t}O_5]^{o}]$ Mon.s.g.?
Pop.: ENDELLITE $(H_2O)_2\{2\infty\}[Al_2^{o}(OH)_4]\{2\infty\}[Si_2^{t}O_5]^{o}]$
PALYGORSKITE $(Mg,Al)_2^{o}(H_2O)_4(OH)\{2\infty\}[Si_4^{t}O_{10}]$ C2/m
SEPIOLITE $Mg_4^{o}(H_2O)_6(OH)_2\{2\infty\}[Si_6^{t}O_{15}]$ Pncn (≈Palygorskite)

FRAMEWORK

ANALCIME (cubic) $Na(H_2O)\{3\infty\}[Si_2^{t}Al^{t}O_6]$ I a3d
Deriv. ANALCIME(monoclinic)$Na(H_2O)\{3\infty\}[Si_2^{t}Al^{t}O_6]$C2/c (≈Sodalite)
CHABAZITE $(Ca,\square_5)(H_2O)_6\{3\infty\}[Al_2^{t}Si_4^{t}O_{12}]$ R $\bar{3}$m (Zeolite)
GISMONDINE $Ca_2^{o}(H_2O)_9\{3\infty\}[Al_4^{t}Si_4^{t}O_{16}]$ $P2_1/c$
HEULANDITE $(Na,K,Ca,Sr,Ba)_5^{[6]}(H_2O)_{26}$ $\{3\infty\}[Al_9^{t}Si_{27}^{t}O_{72}]$ Cm (Zeolite)
NATROLITE $Na_2^{o}(H_2O)_2\{3\infty\}[Si_3^{t}Al_2^{t}O_{10}]$ Fdd2 (Zeolite)
SCOLECITE $Ca^{[7]}(H_2O)_3\{3\infty\}[Si_3^{t}Al_2^{t}O_{10}]$ Cc

MINERALS TENTATIVELY CLASSIFIED

ACUMINITE $\{3\infty\}[Sr^{[9]}Al^{o}F_4(OH)(H_2O)]$ C2/c (≈Tikhonenkovite)
AFGHANITE $(Na,Ca,K)_8^{[8]}(Cl,SO_4)_3(H_2O)_n\{3\infty\}[(Si,Al)_{12}^{t}O_{24}]$ $P6_3mc$... (≈Cancrinite,Zeolite)
AFWILLITE $\{2\infty\}[Ca_2^{[7]}Ca^{[6]}Si_2^{t}O_6(OH)_2(H_2O)_2]$ Cc (≈Bultfonteinite)
AKROCHORDITE $(Mn,Mg)_5^{o}As_2^{t}[O_8(OH)_4(H_2O)_4]$ $P2_1/c$
AKSAITE $Mg^{o}(H_2O)_2\{g\}[(B_2^{t}B^{tr})_2O_7(OH)_6]$ Pbca (≈Volkovskite)
ALUMINITE $(H_2O)_4[Al_2^{o}(OH)_4(H_2O)_3\{g\}[S^{t}O_4]]$ $P2_1/c$
AMARANTITE $(H_2O)_6\{1\infty\}[Fe_4^{o}S_4^{t}O_{18}(H_2O)_8]$ P $\bar{1}$
ANAPAITE $3\infty[Ca_2^{[7by]}Fe^{o}P_2^{t}O_8(H_2O)_4]$ P $\bar{1}$
APJOHNITE $Mn^{o}Al_2^{o}S_4^{t}[O_{16}(H_2O)_{22}]$ $P2_1/c$ (=Halotrichite)
ARMSTRONGITE $Ca^{o}Zr^{o}(H_2O)_{25}\{2\infty\}[Si_6^{t}O_{15}]$ C2/m...
ARSENBRACKEBUSCHITE $Pb_2^{[6/11]}(Fe,Zn)^{o}As_2^{t}[O_8(H_2O)]$ P2/m (≈Brackebuschite)
ARTINITE $Mg_2^{o}\{g\}[C^{tr}O_3](OH)_2(H_2O)_3$ C2/m
BASALUMINITE $Al_4^{o}S^{t}[O_4(OH)_{10}(H_2O)_4]$ Mon. s.g.?
BAYLISSITE $K^{[5+3]}Mg^{o}(H_2O)_4\{g\}[C^{tr}O_3]_2$ $P2_1/n$
BERBORITE $\{3\infty\}[Be_2^{t}B^{tr}O_3(OH,F)(H_2O)]$ P3
BERMANITE $Mn_3^{o}P_2^{t}[O_8(OH)_2(H_2O)_4]^{c}$ $P2_1$
BIKITAITE (triclinic) $3\infty[Li^{t}Al^{t}Si_2^{t}O_6(H_2O)]$ Tric. P1
BIKITAITE (monoclinic) $3\infty[Li^{t}Al^{t}Si_2^{t}O_6(H_2O)]$ $P2_1$
BIRNESSITE $(Mg,Mn)^{o}Mn_6^{o}[O_{14}(Na,Ca,K)(H_2O)_5]$ (Hex.) C2/m (≈Chalcophanite)
BLÖDITE $Na_2^{o}\{g\}[Mg^{o}S_2^{t}O_8(H_2O)_4]$ $P2_1/a$
BOGGSITE $Na_3Ca_8(H_2O)_{70}\{3\infty\}[(Si,Al)_{96}^{t}O_{192}]$ I mma (Zeolite)
BRANDTITE $Ca_2^{[7]}\{1\infty\}[(Mn,Mg)^{o}As_2^{t}O_8(H_2O)_2]$ $P2_1/c$ (=Kröhnkite)
BRASSITE $Mg^{o}As^{t}[O_3(OH)(H_2O)_4]$ Pbca
BREWSTERITE $(Sr,Ba,Ca)^{[9]}(H_2O)_5\{3\infty\}[Al_2^{t}Si_6^{t}O_{16}]$ $P2_1/m$ (Zeolite)
BRUSHITE $Ca^{[6+2]}P^{t}[O_3(OH)(H_2O)_2]$ I 2/a (≈Gypsum)
BUDDINGTONITE $(NH_4)(H_2O)_{0.5}\{3\infty\}[Si_3^{t}Al^{t}O_8]$ $P2_1$... (≈Sanidine)
BUTLERITE $Fe^{o}S^{t}[O_4(OH)(H_2O)_2]$ $P2_1/m$
CALCIUM CATAPLEIITE $Ca^{[6]}(H_2O)\{3\infty\}[Zr^{o}Si_3^{t}O_9]$ $P6_3/mmc$ (≈Catapleiite)
CARLOSTURANITE $(Mg,Fe,Ti)_{21}^{o}(Si,Al)_{12}^{t}[O_{28}(OH)_{34}(H_2O)]$ Cm
CARRBOYDITE $(Ni,Al)_8^{o}S_{1.6}^{t}[O_{6.4}(OH)_{16}(H_2O)_{8.5}]^{n}$ Hex.s.g.?
CATAPLEIITE $Na_2^{[6]}(H_2O)_2\{3\infty\}[Zr^{o}Si_3^{t}O_9]$ B2/b
CHALCONATRONITE $Na_2^{o}(H_2O)_3Cu^{[5y]}\{g\}[C^{tr}O_3]_2$ $P2_1/n$
CLINOPTILOLITE $(Na,K)_6^{[6]}(H_2O)_{20}\{3\infty\}[Al_6^{t}Si_{30}^{t}O_{72}]$ C2/m (≈Heulandite,Zeolite)
COPIAPITE $(H_2O)_6\{1\infty\}[Fe_2^{o}S_3^{t}O_{12}(OH)(H_2O)_4]_2$ $\{g\}[Fe^{o}(H_2O)_6]$ P $\bar{1}$
CORRENSITE $(Mg,Fe,Al)_9^{o}(OH)_{10}(H_2O)_n\{2\infty\}[(Si,Al)_4^{t}O_{10}]_2^{(2.s)c}$ Orth. s.g.? (≈Vermiculite-Chlorite)
COWLESITE $Ca(H_2O)_{5\text{-}6}\{3\infty\}[Al_2^{t}Si_3^{t}O_{10}]$ $P222_1$ (≈Thomsonite,Zeolite)
EDINGTONITE (tetragonal) $Ba(H_2O)_{3.5}\{3\infty\}[Al_2^{t}Si_3^{t}O_{10}]$ P $\bar{4}2_1m$ (≈Natrolite,Zeolite)
EDINGTONITE (orthorhombic) $Ba(H_2O)_4\{3\infty\}[Al_2^{t}Si_3^{t}O_{10}]$ $P2_12_12$ (≈Natrolite,Zeolite)
EUCHROITE $Cu_2^{o}As^{t}[O_4(OH)(H_2O)_3]$ $P2_12_12_1$
EUDIDYMITE $Na_2^{[7]}(H_2O)\{3\infty\}[Be_2^{t}Si_6^{t}O_{15}]$ C2/c
EZCURRITE $Na_2^{[6/7]}(H_2O)_2\{1\infty\}[B_5^{t}O_7(OH)_3]$ P $\bar{1}$
FAIRFIELDITE $Ca_2^{[7]}\{1\infty\}[(Mn,Fe)^{o}P_2^{t}O_8(H_2O)_2]$ P $\bar{1}$ (≈Kröhnkite)

Table 68S

$A_pB_qC_rD_s.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED (cont.)

FALCONDITE $(Ni,Mg)_4{}^{o}(H_2O)_6(OH)_2\{2\infty\}[Si_6{}^{t}O_{15}]$ Pncn (=Sepiolite,≈Palygorskite)

FERRINATRITE $\{3\infty\}[Na_3{}^{[7]}Fe^{o}S_3{}^{t}O_{12}(H_2O)_3]$ P $\bar{3}$

FIBROFERRITE $Fe^{o}S^{t}[O_4(OH)(H_2O)_5]$ R 3

GAIDONNAYITE $Na_2{}^{o}Zr^{o}(H_2O)_2\{1\infty\}[Si_3{}^{t}O_9]$ $P2_1nb$ (Georgechaoite)

GAYLUSSITE $Ca^{[8]}Na_2{}^{[6]}(H_2O)_5\{g\}[C^{tr}O_3]_2$ C2/c

GMELINITE $Na_4(H_2O)_{11}\{3\infty\}[Al_4{}^{t}Si_8{}^{t}O_{24}]$ $P6_3/mmc$ (Zeolite)

GOLDICHITE $K^{[10/11]}\{2\infty\}[Fe^{o}S_2{}^{t}O_8(H_2O)_4]$ $P2_1/c$

GOOSECREEKITE $Ca^{[6]}(H_2O)_5\{3\infty\}[Al_2{}^{t}Si_6{}^{t}O_{16}]$ $P2_1$ (Zeolite)

GÖRGEYITE $K_2{}^{[8]}[Ca_3{}^{[9]}Ca_2{}^{[8]}S_6{}^{t}O_{24}(H_2O)]$ B2/b

HAIDINGERITE $Ca^{o}As^{t}[O_3(OH)(H_2O)]$ Pcnb

HALOTRICHITE $Fe^{o}Al_2{}^{o}S_4{}^{t}[O_{16}(H_2O)_{22}]$ P2/m (=Apjohnite)

HEMIMORPHITE $(H_2O)\{3\infty\}[Si_2{}^{t}Zn_4{}^{t}O_7(OH)_2]$ I mm2

HILAIRITE $Na_2(H_2O)_3\{1\infty\}[Zr^{o}Si_3{}^{t}O_9]$ R32

HILGARDITE - 1Tc $Ca_2{}^{[8/7]}(H_2O)Cl\{3\infty\}[B_3{}^{t}B_2{}^{tr}O_9]$ P1 (≈Tyretskite)

HILGARDITE - 3Tc $Ca_2{}^{[8by]}(H_2O)Cl\{3\infty\}[B_3{}^{t}B_2{}^{tr}O_9]$ P1 (≈Tyretskite)

HILGARDITE - 4M $Ca_2{}^{[8by]}(H_2O)Cl\{3\infty\}[B_3{}^{t}B_2{}^{tr}O_9]$ Aa (≈Zeolite)

HOHMANNITE $(H_2O)_4\{1\infty\}[Fe_2{}^{o}S_2{}^{t}O_9(H_2O)_4]$ P $\bar{1}$ (≈Amarantite)

HONESSITE $(H_2O)_n[2\infty[(Ni,Fe)_6{}^{o}(OH)_{16}\{g\}[S^{t}O_4]]$ Trig. s.g.? (≈Reevesite)

HUNGCHAOITE $(H_2O)_2\{3\infty\}[Mg^{o}(H_2O)_5B_4{}^{t}O_5(OH)_4]$ P $\bar{1}$

HYDROMAGNESITE $\{3\infty\}[Mg_5{}^{o}(OH)_2(H_2O)_4\{g\}[C^{tr}O_3]_4]$ $P2_1/c$

INDERITE $(H_2O)_5\{g\}[Mg^{o}B_2{}^{t}B^{tr}O_3(OH)_5]$ $P2_1/a$(≈Kurnakovite)

INYOITE $Ca^{[8]}(H_2O)_4\{g\}[B_2{}^{t}B^{tr}O_3(OH)_5]$ $P2_1/a$

JULIËNITE $Na_2{}^{[8]}(H_2O)_8Co^{t}\{g\}[SCN]_4$ $P2_1/n$

JURBANITE $(H_2O)_2[\{g\}[Al_2{}^{o}(OH)_2(H_2O)_8]\{g\}[S^{t}O_4]_2]$ $P2_1/n$ (≈Aluminite)

KERNITE $Na_2{}^{[5]}(H_2O)_3\{1\infty\}[B_2{}^{t}B_2{}^{tr}O_6(OH)_2]$ $P2_1/c$

KEROLITE $Mg_3{}^{o}(OH)_2\{2\infty\}[Si_4{}^{t}O_{10}]$ S.? (≈Pimelite,≈Talc)

KINOITE $\{3\infty\}[Ca_2{}^{o}(H_2O)_2Cu_2{}^{[5y]}\{g\}[Si_3{}^{t}O_{10}]]$ $P2_1/m$...(≈Shattuckite)

KIPUSHITE $(Cu,Zn)_6{}^{o}P_2{}^{t}[O_8(OH)_6(H_2O)]$ $P2_1/c$ (=Veszelyite)

KOVDORSKITE $Mg_2{}^{o}P^{t}[O_4(OH)(H_2O)_3]$ $P2_1/a$

KRAUSITE $K^{[10]}\{1\infty\}[Fe^{o}S_2{}^{t}O_8(H_2O)]$ $P2_1/m$

KRAUTITE $Mn^{o}As^{t}[O_3(OH)(H_2O)]$ $P2_1/n$ (≈Haidingerite)

KRÖHNKITE $Na_2{}^{[7]}\{1\infty\}[Cu^{o}S_2{}^{t}O_8(H_2O)_2]$ $P2_1/c$ (=Brandtite).

KTENASITE $2\infty[(Cu,Zn)_4{}^{o}S_2{}^{t}O_8(OH)_6]\{g\}[Zn^{o}(H_2O)_6]$ $P2_1/c$

KURNAKOVITE $3\infty[Mg^{o}(OH)_5\{g\}[B_2{}^{t}B^{tr}O_3(H_2O)_5]]$ P $\bar{1}$ (≈Inderite)

LANGITE $Cu_4{}^{o}S^{t}[O_4(OH)_6(H_2O)_2]$ Pc (≈Wroewolfeite)

LARDERELLITE $NH_4(H_2O)\{1\infty\}[B_5O_7(OH)_2]$ $P2_1/c$

LAUMONTITE $Ca^{o}(H_2O)_4\{3\infty\}[Al_2{}^{t}Si_4{}^{t}O_{12}]$ C2/m (≈Mordenite,Zeolite)

LECONTITE $Na^{o}S^{t}[O_4(H_2O)_2(NH_4,K)]$ $P2_12_12_1$ (≈Mirabilite)

LEGRANDITE $Zn_2{}^{o}As^{t}[O_4(OH)(H_2O)]$ $P2_1/c$ (≈Spencerite)

LEONITE $3\infty[K^{[9]}K^{[10]}Mg^{[6]}S^{t}{}_2O_8(H_2O)_4]$ C2/m

LÖWEITE $Na_{12}{}^{[7]}(H_2O)_3\{g\}[S^{t}O_4]_4\{3\infty\}[Mg_7{}^{o}S_9{}^{t}O_{36}(H_2O)_{12}]$

MAKATITE $Na^{o}Na^{[5by]}(H_2O)_4\{2\infty\}[Si_2{}^{t}O_4(OH)]_2P2_1/c$

MANNARDITE $Ti_6{}^{o}(Cr)_2{}^{o}[Ba(H_2O)O_{16}]^{chh}$ I $4_1/a$(≈Hollandite)

MARICOPAITE $Ca_2Pb_7(H_2O)_{32}\{3\infty\}[(Si,Al)_{48}{}^{t}O_{100}]$ Cmmm..(≈Mordenite,Zeolite).

MATTEUCCITE $Na^{o}S^{t}[O_4H(H_2O)]$ Aa (≈Mirabilite)

MCALLISTERITE $Mg_2{}^{o}B_{12}{}^{t}[O_{14}(OH)_{12}(H_2O)_9]$ R 3c

MENDOZITE $Na^{o}Al^{o}S_2{}^{t}[O_8(H_2O)_{11}]$ C2/c (≈Tamarugite)

METAVIVIANITE $Fe_3{}^{o}P_2{}^{t}[O_8(H_2O)_6(OH_x.]$ P $\bar{1}$ (Subs.d.Symplesite)

MEYERHOFFERITE $Ca^{o}(H_2O)\{g\}[B_2{}^{t}B^{tr}O_3(OH)_5]$ P $\bar{1}$ (≈Inderite)

MINASRAGRITE $V^{o}S^{t}[O_5(H_2O)_5]$ $P2_1/c$

MOOREITE $(Mg,Zn)_{11}{}^{o}Zn_4{}^{t}S_2{}^{t}[O_8(OH)_{26}(H_2O)_8]$ $P2_1/a$

MOSESITE $(H_2O)Cl\ 3\infty[N^{t}Hg_2{}^{[2]\ll c\gg}]$ ^{c} F $\bar{4}3m$ (≈β-Cristobalite)

NAMUWITE $(Zn,Cu)_3{}^{o}Zn^{t}S^{t}[O_4(OH)_6(H_2O)_4]$ P $\bar{3}$

NASINITE $Na_2{}^{[8]}(H_2O)_2\{g\}[B_2{}^{t}B_3{}^{tr}O_8(OH)]$ $Pna2_1$

NATROPHOSPHATE $Na_7{}^{o}P_2{}^{t}[O_8(F,OH)(H_2O)_{19}]$ Fd3c

NEWBERYITE $Mg^{o}P^{t}[O_3OH(H_2O)_3]$ Pbca

NICKELBLÖDITE $Na_2{}^{o}\{g\}[(Ni,Mg)^{o}S_2{}^{t}O_8(H_2O)_4]$ $P2_1/a$ (≈Blödite)

NOBLEITE $Ca^{[10]}(H_2O)_3\{2\infty\}[B_3{}^{t}B_3{}^{tr}(OH)_2]$ $P2_1/a$ (=Tunellite)

PACHNOLITE $Na^{[12]}\ \{2\infty\}[\ Al^{o}\{g\}[Ca^{[8]}F_6(H_2O)]\ ]$ F2/d

PARABARIOMICROLITE $Ba^{cb}\square_3{}^{cb}Ta_4{}^{o}[O_{10}(H_2O)_2(OH)_2\square_2]^{cus}$ R $\bar{3}m$ (Dist.defect.deriv.Pyrochlore)

PARABRANDTITE $Ca_2{}^{[8]}Mn^{o}As_2{}^{t}[O_8(H_2O)_2]$ P1... (=Talmessite)

PARABUTLERITE $Fe^{o}S^{t}[O_4(OH)(H_2O)_2]$ Pmnb

PENTAHYDROBORITE $Ca^{[7]}(H_2O)_2\{g\}[B_2{}^{t}O(OH)_6]$ P $\bar{1}$

PHARMACOLITE $\{2\infty\}[Ca^{[8]}As^{t}O_4(H_2O)_2]$ I a (≈Gypsum)

PHILIPSBURGITE $(Cu,Zn)_6{}^{o}(As,P)_2{}^{t}[O_8(OH)_6(H_2O)]$ $P2_1/c$ (=Veszelyite)

PHOSPHOPHYLLITE $Zn^{[6]}Zn^{t}P_2{}^{t}[O_8(H_2O)_4]$ $P2_1/c$ (≈Hopeite)

PHOSPHORRÖSSLERITE $Mg^{o}P^{t}[O_3(OH)(H_2O)_7]$ C2/c (≈Rösslerite)

PICROMERITE $K_2{}^{[7]}Mg^{o}S_2{}^{t}[O_8(H_2O)_6]$ $P2_1/a$ (=Boussingaultite)

PIMELITE $Ni_3{}^{o}(H_2O)(OH)_2\{2\infty\}[Si_4{}^{t}O_{10}]^{(2h)c}$ S.? (≈Talc)

PIRSSONITE $\{2\infty\}[Na_2{}^{[6]}Ca^{[8]}(H_2O)_2\{g\}[C^{tr}O_3]_2]$ Fdd2

PLANCHÉITE $Cu_8{}^{[6/4]}(OH)_4(H_2O)\{1\infty\}[Si_8{}^{t}O_{22}]^{2.cx}$ Pcnb (≈Shattuckite,≈Tremolite)

POLLUCITE $(Cs,Na)(H_2O)_n\{3\infty\}[Si_2{}^{t}Al^{t}O_6]$ I a3d (Zeolite)

POSNJAKITE $\{2\infty\}[Cu_4{}^{o}S^{t}O_4(OH)_6H_2O)]$ Pa

POTASSIUM ALUM $K^{o}Al^{o}S_2{}^{t}[O_8(H_2O)_{12}]$ Pa3

PROSPERITE $\{3\infty\}[Ca^{[9]}Zn_2{}^{[5]}As_2{}^{t}O_8(H_2O)]$ C2/c

RANSOMITE $Cu^{o}Fe_2{}^{o}S_4{}^{t}[O_{16}(H_2O)_6]$ $P2_1/a$ (≈Römerite)

REDINGTONITE $(Fe,Mg,Ni)^{o}(Cr,Al)_2{}^{o}S_4{}^{t}[O_{16}(H_2O)_{22}]$ (Mon.)P2 (≈Halotrichite)

RIVERSIDEITE $Ca_{10}(OH)_4\{2\infty\}[Si_{12}{}^{t}O_{31}(H_2O)_4]$ $C222_1$ (≈Tobermorite)

ROSELITE $Ca_2{}^{[7]}\{1\infty\}[(Co,Mg)^{o}As_2{}^{t}O_8(H_2O)_2]$ $P2_1/c$ (=Brandtite)

RÖSSLERITE $Mg^{o}As^{t}[O_3OH(H_2O)_7]$ C2/c

SCARBROITE $Al_5{}^{o}C^{tr}[O_3(OH)_{13}(H_2O)_5]^{h}$ Tric. s.g.?

SCHOLZITE $Ca^{o}Zn_2{}^{t}P_2{}^{t}[O_8(H_2O)_2]$ $Pbc2_1$

SENEGALITE $Al^{o}Al^{[5by]}P^{t}[O_4(OH)_3(H_2O)]$ $P2_1nb$

SHERWOODITE $Ca_{4.5}(H_2O)_{28}\{3\infty\}[Al^{o}V_{14}{}^{o}O_{40}]$ I 4_1amd

SODDYITE $(H_2O)_2\{1\infty\}[(UO_2)_2Si^{t}O_4]$ Fddd

SODIUM ALUM $Na^{o}Al^{o}S_2{}^{t}[O_8(H_2O)_{12}]$ Pa3

SPENCERITE $Zn_2{}^{o}Zn_2{}^{t}P_2{}^{t}[O_8(OH)_2(H_2O)_3]$ P2/c

STELLERITE $Ca^{[6]}(H_2O)_7\{3\infty\}[Si_7Al_2{}^{t}O_{18}]$ Fmmm (≈Stilbite,Zeolite)

STOKESITE $Ca^{[8]}Sn^{[6]}(H_2O)_2\{1\infty\}[Si_3{}^{t}O_9]$ Pnna

STRASHIMIRITE $Cu_4{}^{o}As_2{}^{t}[O_8(OH)_2(H_2O)_{2.5}]$ P2/m...

STRINGHAMITE $Ca^{[7]}H_2O\{2\infty\}[Cu^{sq}\{g\}[Si^{t}O_4]]$ $P2_1/c$

STRUVITE $Mg^{o}P^{t}(NH_4)[O_4(H_2O)_6]$ $Pmn2_1$

TALMESSITE $Ca_2{}^{[8]}Mg^{o}As_2{}^{t}[O_8(H_2O)_2]$ P $\bar{1}$ (=Parabrandtite)

Table 69S

$A_pB_qC_rD_s.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED (cont.)

TAMARUGITE $Na^{o}Al^{o}S_2^{t}[O_8(H_2O)_6]$ $P2_1/a$
THOMSENOLITE $Na^{[12]}\{3\infty\}[Ca^{[8]}Al^{o}(H_2O)F_6]$ $P2_1/c$
TIKHONENKOVITE $Sr^{[9]}Al^{o}[F_4(OH)(H_2O)]$ $P2_1/c$
TINCALCONITE $\{g\}[B_2^{t}B_2^{tr}O_5(OH)_4]\{3\infty\}[Na^{o}_2(H_2O)_3]$ R32
TRUSCOTTITE $(Ca,Mn)_{14}^{[6]}Si_{24}^{t}[O_{58}(OH)_8(H_2O)_2]$ P $\bar{3}$
TSCHERMIGITE $Al^{o}S_2^{t}O_8(H_2O)_{12}\{g\}[NH_4]^{[6]}$ Pa3
TSUMCORITE $Pb^{[8]}(Zn,Fe)_2^{o}As_2^{t}[O_8(OH,H_2O)_2]$ C2/m (≈Brackebuschite)
TUNELLITE $Sr^{[10]}(H_2O)_3\{2\infty\}[B_3^{t}B_3^{tr}O_9(OH)_2]$ $P2_1/a$ (=Nobleite)
UMOHOITE $U^{[6]}Mo^{[6]}[O_6(H_2O)_4]$ $P2_1/m$...
VESZELYITE $(Cu,Zn)_3^{o}P^{t}[O_4(OH)_3(H_2O)_2]P2_1/a$(=Kipushite)
VINOGRADOVITE $3\infty[(Na,Ca)_4^{[8]}Ti_4^{o}Si_8^{t}O_{26}(H_2O,K_3)]$ C2/c (≈Rinkite)
VOLBORTHITE $Cu_3^{o}V_2^{t}[O_7(OH)_2(H_2O)_2]$ C2...
WAIRAKITE $Ca^{[6]}(H_2O)_2\{3\infty\}[Al_2^{t}Si_4^{t}O_{12}]$ I 2/a (≈Analcime,Zeolite)
WAVELLITE $Al_3^{o}P_2^{t}[O_8(OH,F)_3(H_2O)_5]$ Pcmn...
WENDWILSONITE $Ca^{[7]}\{1\infty\}[(Mg,Co)^{o}As_2^{t}O_8(H_2O)_2]$ $P2_1/c$ (=Brandtite)
WHITMOREITE $Fe_3^{o}P_2^{t}[O_8(OH)_2(H_2O)_4]^{c/h}$ $P2_1/c$ (Basic str.Arthurite)
WROEWOLFEITE $Cu_4^{o}S^{t}[O_4(OH)_6(H_2O)_2]$ Pc
YOFORTIERITE $(Mn,Mg)_5^{o}(H_2O)_{8\text{-}9}(OH)_2\{2\infty\}[Si_8^{t}O_{20}]$ Pn (≈Palygorskite)
YUGAWARALITE $Ca^{[8]}(H_2O)_4\{3\infty\}[Si_6^{t}Al_2^{t}O_{16}]$ Pc (Zeolite)
ZEMANNITE $(H,Na)_2(H_2O)_n\{3\infty\}[(Zn,Fe)_2^{o}Te_3^{[4y]}O_9]$ $P6_3/m$ (≈Zeolite)

MINERALS NOT YET CLASSIFIED

AGRINIERITE $(K_2,Ca,Sr)(UO_2)_3O_4.4H_2O$ Cmmm
AMARILLITE $NaFe(SO_4)_2.6H_2O$ P2/m?
AMMONIOBORITE $(NH_4)_3B_{15}O_{20}(OH)_8.4H_2O$ C2/c
ARHBARITE $Cu_2(AsO_4(OH).6H_2O$ Mon. s.g.?
ASBOLANE $Mn(O,OH)_2(Co,Ni,Ca)_x(OH)_{2x}.nH_2O$ Hex. s.g.?
BEARSITE $Be_2AsO_4(OH).4H_2O$ C2/c
BETA-ROSELITE $Ca_2(Co,Mg)(AsO_4)_2.2H_2O$ P $\bar{1}$
●**BIRINGUCCITE** $Na_2B_5O_8(OH).H_2O$ $P2_1/c$
BOLIVARITE $Al_2PO_4(OH)_3.4\text{-}5H_2O$ Amorph.
BOSTWICKITE $CaMn_6Si_3O_{16}.7H_2O$ S.?
●**BOUSSINGAULTITE** $(NH_4)_2Mg(SO_4)_2.6H_2O$ $P2_1/a$
●**BRACKEBUSCHITE** $Pb_2(Mn,Fe)(VO_4)_2.H_2O$ $P2_1/m$...
BRAITSCHITE - (Ce) $(Ca,Na_2)_7(Ce,La)_2B_{22}O_{43}.7H_2O$ Hex. s.g.?
BULACHITE $Al_2AsO_4(OH)_3.3H_2O$ Pmnm...
CAFARSITE $(Ca,Mn)_8(Ti,Fe)_{6.5}(AsO_3)_{12}.2H_2O$ Pn3
CAFETITE $(Ca,Mg)(Fe,Al)_2Ti_4O_{12}.4H_2O$ Ammm
CALCIOHILAIRITE $CaZrSi_3O_9.3H_2O$ R32
●**CANAPHITE** $Na_2CaP_2O_7.4H_2O$ Pc
CASSIDYITE $Ca_2(Ni,Mg)(PO_4)_2.2H_2O$ P $\bar{1}$...
CESBRONITE $Cu_5(TeO_3)_2(OH)_6.2H_2O$ Pbcn
CHLORMAGALUMINITE $(Mg,Fe)_4Al_2(OH)_{12}Cl_2.2H_2O$ P6/mcm...
CHOLOALITE $CuPb(TeO_3)_2.H_2O$ P23...
CLARAITE $(Cu,Zn)_3CO_3(OH)_4.4H_2O$ Hex. s.g.?
COBALTKORITNIGITE $(Co,Zn)(AsO_3OH).H_2O$ P $\bar{1}$?
COLLINSITE $Ca_2(Mg,Fe)(PO_4)_2.2H_2O$ P $\bar{1}$
COMPREIGNACITE $K_2(UO_2)_6(OH)_{14}.4H_2O$ Pnmn...
CYANOCHROITE $K_2Cu(SO_4)_2.6H_2O$ $P2_1/a$
●**DEFERNITE** $Ca_3CO_3(OH,Cl)_4.H_2O$ Pnam
DIETRICHITE $(Zn,Fe,Mn)Al_2(SO_4)_4.22H_2O$ P2
DITTMARITE $(NH_4)MgPO_4.H_2O$ $Pmn2_1$
DORFMANITE $Na_2(PO_3OH).2H_2O$ Orth. s.g.?
DYPINGITE $Mg_5(CO_3)_4(OH)_2.5H_2O$ S.?
EKATERININITE $Ca_2B_4O_7(Cl,OH)_2.2H_2O$ P6/m
●**ELPIDITE** $Na_2ZrSi_6O_{15}.3H_2O$ Pbcm
EUGSTERITE $Na_4Ca(SO_4)_3.2H_2O$ Mon. s.g.?
FELSÖBÁNYAITE $Al_4SO_4(OH)_{10}.5H_2O$ Hex. s.g.?
FERRISTRUNZITE $Fe_3(PO_4)_2(OH)_3.5H_2O$ P1...
FERROSTRUNZITE $Fe_3(PO_4)_2(OH)_2.6H_2O$ P $\bar{1}$
GEORGEITE $Cu_5(CO_3)_3(OH)_4.6H_2O$ Amorph.
GINIITE $Fe_5(PO_4)_4(OH)_2.2H_2O$ P2/a
GOWERITE $CaB_6O_8(OH)_4.3H_2O$ $P2_1/a$
GRANTSITE $Na_4Ca_{0.7}V_{12}O_{32}.8H_2O$ C2/m...
GRUMANTITE $NaSi_2O_4(OH).H_2O$ Fdd2
HALURGITE $Mg_2(B_4O_5(OH)_4)_2.H_2O$ P2/c
HELMUTWINKLERITE $PbZn_2(AsO_4)_2.2H_2O$ P1...
HISINGERITE $Fe_2Si_2O_5(OH)_4.2H_2O$ Mon. ? (Amorph.)
HUEMULITE $Na_4MgV_{10}O_{28}.24H_2O$ P1...
HUMMERITE $KMgV_5O_{14}.8H_2O$ P $\bar{1}$
HYDROBASALUMINITE $Al_4SO_4(OH)_{10}.15H_2O$ Mon. s.g.?
HYDROCALUMITE $Ca_4Al_2(OH)_{12}(Cl,CO_3,OH,H_2O)_{2.5}.4H_2O$ $P2_1$
HYDROGLAUBERITE $Na_{10}Ca_3(SO_4)_8.6H_2O$ S.?
IANTHINITE $UO_2(UO_3)_5.10H_2O$ Orth. s.g.?
IRIGINITE $U(MoO_4)_2(OH)_2.2H_2O$ Mon. s.g.?
JAMBORITE $(Ni,Fe)_8SO_4(OH)_{16}.nH_2O$ Hex. s.g.?
JENNITE $Ca_9Si_6O_{16}(OH)_{10}.6H_2O$ Tric. S.g.?
JOLIOTITE $(UO_2)CO_3.2H_2O$ Pmmm
KAZAKHSTANITE $Fe_5V_{15}O_{39}(OH)_9.8.5H_2O$ C2/c...
KENYAITE $Na_2Si_{22}O_{41}(OH)_8.6H_2O$ Mon. s.g.?
KHADEMITE $Al(SO_4)F.5H_2O$ Pcab
KIMURAITE - (Y) $CaY_2(CO_3)_4.6H_2O$ I mm2...
KINGITE $Al_3(PO_4)_2(OH,F)_3.9H_2O$ Tric. S.g.?
KINICHILITE $(H,Na)_2(Fe,Mg,Zn)_2(TeO_3)_3.3H_2O$ $P6_3$...
KOKTAITE $(NH_4)_2Ca(SO_4)_2.H_2O$ $P2_1/m$
KONYAITE $Na_2Mg(SO_4)_2.5H_2O$ $P2_1/c$
KORITNIGITE $Zn(AsO_3OH).H_2O$ P $\bar{1}$
KOSTYLEVITE $K_2ZrSi_3O_9.H_2O$ $P2_1/a$
LAZARENKOITE $(Ca,Fe)FeAs_3O_7.3H_2O$ Orth. s.g.?
LENNILENAPEITE $K_7Mg_{48}(Si,Al)_{72}(O,OH)_{216}.16H_2O$ P $\bar{1}$?
LERMONTOVITE $UPO_4(OH).H_2O$(?) Ccca
●**LIKASITE** $Cu_3NO_3(OH)_5.2H_2O$ $Pc2_1n$
LINDACKERITE $H_2Cu_5(AsO_4)_4.9H_2O$ P1...
LITHOSITE $K_6Al_4Si_8O_{25}.2H_2O$ Mon. s.g.?
LOKKAITE - (Y) $CaY_4(CO_3)_7.9H_2O$ Pbmm...
LONECREEKITE $NH_4(Fe,Al)(SO_4)_2.12H_2O$ Pa3
LOUGHLINITE $Na_2Mg_3Si_6O_{16}.8H_2O$ S.?
LUDDENITE $Cu_2Pb_2Si_5O_{14}.14H_2O$ Mon. s.g.?
MAGADIITE $NaSi_7O_{13}(OH)_3.3H_2O$ Mon. s.g.?
MELANOCERITE - (Ce) $(Ce,Ca)_5(Si,B)_3O_{12}(OH,F).nH_2O$(?) Amorph. (Hex.)
META-ALUMINITE $Al_2SO_4(OH)_4.5H_2O$ $P2_1$?
MOHRITE $(NH_4)_2Fe(SO_4)_2.6H_2O$ $P2_1/c$
MORAESITE $Be_2PO_4(OH).4H_2O$ C2/c
MPORONROITE $AlWO_3(OH)_3.2H_2O$ (Tric.) Mon. s.g.?
NABAPHITE $NaBaPO_4.9H_2O$ $P2_13$

Table 70S

$A_pB_qC_rD_s.nAq.$(cont.)

MINERALS NOT YET CLASSIFIED (cont.)

NASTROPHITE $Na(Sr,Ba)PO_4.9H_2O$ $P2_13$
NIAHITE $(NH_4)(Mn,Mg,Ca)PO_4.H_2O$ $Pmn2_1$
●**NICKELBOUSSINGAULTITE** $(NH_4)_2(Ni,Mg)(SO_4)_2.6H_2O$ $P2_1/a$
NIFONTOVITE $Ca_3(BO(OH)_2)_3.2H_2O$ B2/b
OTWAYITE $Ni_2CO_3(OH)_2.H_2O$ Orth. s.g.?
OYELITE $Ca_{10}B_2Si_8O_{29}.12H_2O$ Orth. s.g.?
PARANATROLITE $Na_2(Al_2Si_3)O_{10}.3H_2O$ Fmm2 ...
PARASCHOLZITE $CaZn_2(PO_4)_2.2H_2O$ Cc...
PENKVILKSITE $Na_4Ti_2Si_8O_{22}.5H_2O$ Pnca?
PICKERINGITE $MgAl_2(SO_4)_4.22H_2O$ P2
POKROVSKITE $Mg_2CO_3(OH)_2.0,5H_2O$ $P2_1/a$
RAITE $(Na,Ca)_4(Mn,Ti,Fe)_3Si_8(O,OH)_{24}.9H_2O$(?) C222
RAMSBECKITE $(Cu,Zn)_{15}(SO_4)_4(OH)_{22}.6H_2O$ $P2_1/a$
RHOMBOCLASE $HFe(SO_4)_2.4H_2O$ Pnma
ROGGIANITE $Ca_{15}(Si,Al,Be)_{48}O_{90}(OH)_{16}.34H_2O$ I 4/mcm
ROSTITE $AlSO_4(F,OH).5H_2O$ Pcab
ROUSEITE $Pb_2Mn(AsO_3)_2.2H_2O$ P1...
SACROFANITE $(Na,Ca)_9(Si,Al)_{12}O_{24}(OH,SO_4)_4.nH_2O$ $P6_3mc$...
SANTITE $KB_5O_6(OH)_4.2H_2O$ Aba2
SASAITE $(Al,Fe)_6(PO_4,SO_4)_5(OH)_3.36H_2O$ Orth. s.g.?
●**SBORGITE** $NaB_5O_6(OH)_4.3H_2O$ C2/c
SCHULENBERGITE $(Cu,Zn)_7(SO_4,CO_3)_2(OH)_{10}.3H_2O$ P3...
SHAFRANOVSKITE $(Na,K)_6(Mn,Fe)_3Si_9O_{24}.6H_2O$ $P3_1m$...
SMOLIANINOVITE $(Co,Ni,Mg,Ca)_3(Fe^{+3},Al)_2(AsO_4)_4.11H_2O$ Orth. s.g.?
SONORAITE $FeTeO_3(OH).H_2O$ $P2_1c$
STANLEYITE $VOSO_4.6H_2O$ Orth. s.g.?
STILPNOMELANE $(K,Ca,Na)(Fe,Mg,Al)_{12}(Si,Al)_{16}(O,OH)_{54}.nH_2O$ P $\bar{1}$
STRÄTLINGITE $Ca_2Al_2SiO_7.8H_2O$ R $\bar{3}$m
●**SUOLUNITE** $Ca_2Si_2O_5(OH)_2.H_2O$ Fdd2
●**SYNGENITE** $K_2Ca(SO_4)_2.H_2O$ $P2_1/m$
THOMETZEKITE $Pb(Cu,Zn)_2(AsO_4)_2.2H_2O$ S.?
THOROSTEENSTRUPINE $(Ca,Th,Mn)_3Si_4O_{11}F.6H_2O$ Amorph. Metamict
TINTICITE $Fe_4(PO_4)_3(OH)_3.5H_2O$ P2...
TOBERMORITE $Ca_5Si_6O_{16}(OH)_2.xH_2O$ $C222_1$
TYRETSKITE- 1Tc $Ca_2B_5O_9(OH).H_2O$ P $\bar{1}$...
UMBITE $K_2ZrSi_3O_9.H_2O$ $P2_12_12_1$
VANALITE $NaAl_8V_{10}O_{38}.30H_2O$ P2/m...
VANTASSELITE $Al_4(PO_4)_3(OH)_3.9H_2O$ Pmam...
VASHEGYITE $Al_{11}(PO_4)_9(OH)_6.38H_2O$ Pnma ?
VOLKOVSKITE $Ca(B_3O_4(OH)_2)_2.H_2O$ $P2_1$
VYACHESLAVITE $UPO_4(OH).2.5H_2O$ Cmcm...
WARDSMITHITE $Ca_5Mg(B_4O_7)_6.30H_2O$ Hex. s.g.?
WOODWARDITE $(Cu,Al)_8SO_4(OH)_{16}.nH_2O$ Trig. s.g.?
XITIESHANITE $FeSO_4Cl.6H_2O$ $P2_1/a$
YAROSLAVITE $Ca_3Al_2F_{10}(OH)_2.H_2O$ Orth. s.g.?
ZAHERITE $Al_{12}(SO_4)_5(OH)_{26}.20H_2O$ P $\bar{1}$?
ZINCROSELITE $Ca_2Zn(AsO_4)_2.2H_2O$ $P2_1/c$

$A_pB_qC_rD_sE_x.nAq.$

SHEET

AUTUNITE $(H_2O)_{10}[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ I 4/mmm
Pop.: TORBERNITE $(H_2O)_{10}[Cu^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$
URANOCIRCITE $(H_2O)_{10}[Ba^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$
URANOSPINITE $(H_2O)_{10}[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$
Deriv.: SALÉEITE $(H_2O)_{10}[Mg^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ $P2_1/c$
SODIUM AUTUNITE $(H_2O)_8[Na_2^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ P4/nmm
ZEUNERITE $(H_2O)_{16}[Cu^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$ I 4/mmm

HYDROXYAPOPHYLLITE $Ca_4^{[7]}K^{[8]}(OH,F)(H_2O)_8\{2\infty\}[Si_8{}^tO_{20}]^s$ P4/mnc
Pop.: FLUORAPOPHYLLITE $Ca_4^{[7]}K^{[8]}(F,OH)(H_2O)_8\{2\infty\}[Si_8{}^tO_{20}]^a$
Deriv.: NATROAPOPHYLLITE $Ca_4^{[7]}Na^{[8]}F(H_2O)_8\{2\infty\}[Si_8{}^tO_{20}]^a$ Pnnm

CARNOTITE $K_2^{[11]}(H_2O)_3\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$ $P2_1/a$
Pop.: MARGARITASITE $(Cs,H_3O,K)_2^{[11]}(H_2O)\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$

META-AUTUNITE $(H_2O)_6[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ P4/nmm
Pop.: META-ANKOLEITE $(H_2O)_8[K_2^{[8]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$
Deriv.: SINCOSITE $(H_2O)_5[Ca^{[6]}\{2\infty\}[VOP^tO_4]_2]$ Tet. s.g.?

METATORBERNITE $(H_2O)_8[Cu^{sq}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ P4/n (≈Meta-autunite)
Pop.: METAZEUNERITE $(H_2O)_8[Cu^{sq}\{2\infty\}[U^{[2+4]}O_2As^tO_4]_2]$

MONTMORILLONITE $(H_2O)_n(Na,Ca)_{0.3}{}^o(Al,Mg)_2{}^o(OH)_2\{2\infty\}[Si_4{}^tO_{10}]^{(2.s)c}$ C2/m
Pop.: BEIDELLITE $(H_2O)_n(Na,Ca)_{0.3}Al_2{}^o(OH)_2\{2\infty\}[(Si,Al)_4{}^tO_{10}]^{(2.s)c}$
NONTRONITE $(H_2O)_nNa_{0.3}{}^oFe_2{}^o(OH)_2\{2\infty\}[(Si,Al)_4{}^tO_{10}]^{(2.s)c}$
Deriv.: VOLKONSKOITE $(H_2O)_4Ca_{0.3}{}^o(Cr,Mg)_2{}^o(OH)_2\{2\infty\}[(Si,Al)_4{}^tO_{10}]^{(2.s)c}$ Mon.s.g.?

VERMICULITE $(H_2O)_8Mg_{0.7}{}^o(Mg,Fe,Al)_6{}^o(OH)_2\{2\infty\}[(Si,Al)_8{}^tO_{22}]^{(2.s)c}$ C2/c

FRAMEWORK

PHILLIPSITE $K^{[12]}(Ca_{0.5},Na)_2^{[6]}(H_2O)_6\{3\infty\}[Si_5{}^tAl_3{}^tO_{16}]$ $P2_1/m$ (Zeolite)
STILBITE $Na^{[6]}Ca_4^{[6]}(H_2O)_3\{3\infty\}[Si_{27}{}^tAl_9{}^tO_{72}]$ C2/m (Zeolite)
THOMSONITE $NaCa_2(H_2O)_6\{3\infty\}[Al_5{}^tSi_5{}^tO_{20}]$ Pncn (Zeolite)
TURQUOISE $Cu^{[6]}(H_2O)_4\{3\infty\}[Al_6{}^o(OH)_8(P^tO_4)_4]$ P $\bar{1}$
WILLHENDERSONITE $(KCa\square_4)(H_2O)_5\{3\infty\}[Al_3{}^tSi_3{}^tO_{12}]$ P $\bar{1}$ (Dist.subs.d.Chabazite.Zeolite)
Deriv.: HARMOTOME $Ba^{[12]}(Ca_{0.5},Na)^{[6]}(H_2O)_{12}\{3\infty\}[Si_{11}{}^tAl_5{}^tO_{32}]$ $P2_1/m$...

Table 71S

$A_pB_qC_rD_sE_x.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED

ABERNATHYITE $(H_2O)_3K^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]$ P4/ncc (≈Meta-ankoleite,≈Meta-torbernite)

ALUMINOPHARMACOSIDERITE $Al_4^oAs_3^t[O_{12}(OH)_4(H_2O)_{6.5}K]$ P $\bar{4}$3m

AMICITE $K_2^{[7]}Na_2^{[6]}(H_2O)_5\{3\infty\}[Al_4^tSi_4^tO_{16}]$ I 2 (Zeolite)

ARISTARAINITE $Na_2^{[5y]}Mg^o(H_2O)_4\{2\infty\}[B_3^tB_3^{tr}O_8(OH)_4]$ $P2_1/a$

ARMENITE $3\infty[Ca_2^oAl_6^tSi_9^tO_{30}(H_2O)_2Ba^{[12]}]$ Pnna (=Milarite)

ARSENIOSIDERITE $Ca_2^{[7]}(H_2O)_3\{2\infty\}[Fe_3^oAs_3^tO_{12}]$ A2/a (=Mitridatite)

ARTHURITE $Cu^oFe_2^oAs_2^t[O_8(OH)_2(H_2O)_4]^{c/h}$ $P2_1/c$ (Subs.deriv.Whitmorite,=Earlshnnonite)

AUBERTITE $Cu^oAl^oS_2^t[O_8(H_2O)_{14}Cl]$ P $\bar{1}$

BASSETITE $(H_2O)_8[Fe^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ $P6_3/mmc$ (≈Metatorbernite)

BAYLDONITE $(H_2O)\{2\infty\}[(Cu,Zn)_3Pb^{[8ap]}(As^tO_4)_2(OH)_2]$ $P2_1/m$

BEYLEYTE $(H_2O)_{18}\{3\infty\}[Mg_2^oUO_2(CO_3)_3]$ C2/c (≈Liebijite)

BECQUERELITE $(H_2O)_8Ca^{[5]}\{2\infty\}[(UO_2)_6O_4(OH)_6]$ $Pn2_1a$ (≈Billietite)

BERAUNITE $Fe_6^oP_4^t[O_{16}(OH)_5(H_2O)_6]$ C2/c (≈Strunzite)

BILLIETITE $(H_2O)_4Ba\{2\infty\}[(UO_2)_6O_4(OH)_6]$ $Pbn2_1$ (≈Becquerelite)

BOTRYOGEN $Mg^oFe^oS_2^t[O_8(OH)(H_2O)_7]$ $P2_1/n$ (≈Copiapite)

BRUGNATELLITE $(H_2O)_4C^{tr}O_3\{2\infty\}[Mg_6^oFe^o(OH)_{13}]$ P $\bar{3}$...

BULFONTEINITE $(H_2O)\{2\infty\}[Ca_2^{[7]}Si^tO_3(OH)F]$ P $\bar{1}$ (≈Connelite)

CAMINITE $Mg^oMg_x^oS^t[O_4(OH)_2(H_2O)_y]$ $I\,4_1/amd$

CAMPIGLIAITE $Cu_4^oMn^oS_2^t[O_8(OH)_6(H_2O)_4]$ C2 (≈Devilline)

CAVANSITE $(H_2O)_4\{3\infty\}[Ca^{[7]}V^{[5y]}Si_4^tO_{11}]$ Pcmn

CHILDRENITE $(Fe,Mn)^oAl^oP^t[O_4(OH)_2(H_2O)]$ Bba2 (Eosphorite)

COALINGITE $Mg_{10}^oFe_2^oC^{tr}[O_3(OH)_{24}(H_2O)_2]$ R $\bar{3}$m (≈Brucite)

CUPROCOPIAPITE $(H_2O)_6\{1\infty\}[Cu^oFe_3^oS_6^tO_{24}(OH)_2(H_2O)_8]\{g\}[Fe^o(OH)_6]$ P $\bar{1}$ (Subs.d.Copiapite)

CURIÉNITE $Pb^{[8]}(H_2O)_5\{2\infty\}[(UO_2)V_2O_8]$ Pcan (=Francevillite)

DARAPSKITE $Na_2^oNa^{[7]}(H_2O)\{g\}[S^tO_4]\{g\}[N^{tr}O_3]$ $P2_1/m$

DESPUJOLSITE $(H_2O)_3\{3\infty\}[Ca^{[10]}Mn^{[6]}S_2^tO_8(OH)_6]$ P $\bar{6}$2c (=Schaurteite)

DEVILLINE $Ca^{[7]}(H_2O)_3\{g\}[S^tO_4]_2\{2\infty\}[Cu_4^{[6]}(OH)_6]$ $P2_1/c$

DRESSERITE $(H_2O)_3\{3\infty\}[Ba_2Al_4(OH)_4\{g\}[C^{tr}O_3]_4]$ Pbmm

DUFRENITE $3\infty[Ca_{0.5}^oFe_6^oP_4^tO_{16}(OH)_6(H_2O)_2]$ C2/c

DUNDASITE $(H_2O)\{3\infty\}[Pb^{[8]}Al_2^o(OH)_4\{g\}[C^{tr}O_3]_2]$ Pbnm

EARLSHANNONITE $(Mn,Fe)^oFe_2^oP_2^t[O_8(OH)_2(H_2O)_4]^{c/h}$ $P2_1/c$ (Subs.d.Whitmoreite)

EOSPHORITE $(Mn,Fe)^oAl^oP^t[O_4(OH)_2(H_2O)]$ Bbam (=Childrenite)

EPISTILBITE $Na^{[9]}Ca_3^{[9]}(H_2O)_{16}\{3\infty\}[Al_6^tSi_{18}^tO_{48}]$ C2/m (Zeolite)

ETTRINGITE $Ca_6^{[8]}Al_2^oS_3^t[O_{12}(OH)_{12}(H_2O)_{26}]$ P31c (≈Thaumasite)

FEDORITE $(K,Na)_{2.5}(Ca,Na)_7^o(OH,F)_2(H_2O)\{2\infty\}[Si_{16}O_{38}]$ C $\bar{1}$ (Calciotalc)

FERRICOPIAPITE $(H_2O)_6(Fe,Al,Mg)^o\{1\infty\}[Fe_2^oS_3^tO_{12}(OH)(H_2O)_4]_2\{g\}[Fe^o(H_2O)_6]$ P $\bar{1}$ (Inser.d.Copiapite)

FLEISCHERITE $\{3\infty\}[Pb_3^{[9]}Ge^oS_2^tO_8(OH)_6(H_2O)_3]$ P $\bar{6}$2c (=Schaurteite)

FLUELLITE $Al_2^oP^t[O_4F_2(OH)(H_2O)_7]$ Fddd

FOGGITE $\{3\infty\}[Ca^{[8]}Al^oP^tO_4(OH)_2(H_2O)]$ $A2_122$

FOURMARIERITE $Pb^{[6+3]}(H_2O)_4\{2\infty\}[U_4^{[2+5]}O_{11}(OH)_4]$ $Bb2_1m$

FRANCEVILLITE $(Ba,Pb)^{[8]}(H_2O)_5\{2\infty\}[(UO_2)_2V_2O_8]$ Pcan (=Curiénite)

FRITZSCHEITE $(H_2O)_4[Mn^{[6]}\{2\infty\}[U^{[2+4]}O_2V^tO_4]_2]$ Pnma (≈Autunite)

GARRONITE $NaCa_{2.5}(H_2O)_{13}\{2\infty\}[Al_6^tSi_{10}^tO_{32}]$ $I\,4_1/amd$? (Zeolite)

GEORGECHAOITE $K^oNa^oZr^o(H_2O)_2\{1\infty\}[Si_3^tO_9]$ $P2_1nb$ (≈Gaidonnayite)

GOBBINSITE $(Na,K)_4Ca(H_2O)_{12}\{3\infty\}[Al_6^tSi_{10}O_{32}]$ $Pmn2_1$ (Zeolite)

GORDONITE $Mg^oAl_2^oP_2^t[O_8(OH)_2(H_2O)_8]$ P $\bar{1}$ (≈Laueite)

GUILDITE $Cu^oFe^oS_2^t[O_8(OH)(H_2O)_4]$ $P2_1/m$

HAIWEEITE $(H_2O)_5\{3\infty\}[Ca(UO_2)_2Si_6^tO_{15}]$ P2/c

HANNAYITE $Mg_3^oP_4^t[(NH_4)_2O_{12}(OH)_4(H_2O)_8]$ P $\bar{1}$ (≈Struvite)

HEINRICHITE $Ba(H_2O)_{10}\{2\infty\}[U^oAs^tO_{12}]$ $I\,4/mmm...$ (≈Zeunerite)

HYDROBIOTITE $K^{[12]}(Mg,Fe)_6^o(H_2O)_x\{2\infty\}[(Si,Al)_8^tO_{20}]^{(2s)c}$ Orth.s.g.?

HYDROBORACITE $Ca^{[8]}Mg^{[6]}(H_2O)_3\{1\infty\}[B_2^tB^{tr}O_4(OH)_3]_2$ P2/c

HYDROCHLORBORITE $[Cl(H_2O)_5]Ca_2(H_2O)_3\{1\infty\}[B_2^tB^{tr}(OH)_4]$ $I\,2/a$

HYDRODRESSERITE $(H_2O)_3\{3\infty\}[Ba^{[9]}Al_2^o(OH)_4\{g\}[C^{tr}O_3]_2]$ P $\bar{1}$ (≈Dundarite)

INDERBORITE $(H_2O)_2\{2\infty\}[Ca^{[8]}Mg^oB_4^tB_2^{tr}O_6(OH)_{10}(H_2O)_4]$ C2/c

INESITE $(H_2O)_5\{3\infty\}[Ca_2^{[7y]}Mn_7^oSi_{10}^tO_{28}(OH)_2]$ P $\bar{1}$

KAINITE $K^{[8/9]}Cl(H_2O)_3\{2\infty\}[Mg^oS^tO_4]$ C2/m

KAMBALDAITE $(H_2O)_3\{3\infty\}[Na^{[6]}Ni_4^o\{g\}[C^{tr}O_3]_3(OH)_3]$ $P6_3$

KASOLITE $Pb_2^{[8]}(H_2O)_2\{2\infty\}[(U^{[7]}O_2)_2(Si^tO_4)_2]$ $P2_1/a$ (≈Uranophane)

KEHOEITE $(Zn,Ca)(H_2O)_5\{3\infty\}[P_2^tAl_2^tO_8(OH)_2]$ $I\,a\,\bar{3}d$ (≈Analcime cubic)

LABUNTSOVITE $(Ti,Nb)_9^oSi_{16}^t[O_{48}(O,OH)_{10}(H_2O)_x(K,Na)_8]$ I 2/m

LANDESITE $(Mn,Mg)_9^oFe_3^oP_8^t[O_{32}(OH)_3(H_2O)_9]$ Pbna

LAUEITE $Mn^oFe_2^oP_2^t[O_8(OH)_2(H_2O)_8]$ P $\bar{1}$ (≈Strunzite)

LAWSONBAUERITE $(Mn,Mg)_9^oZn_4^oS_2^t[O_8(OH)_{22}(H_2O)_8]$ $P2_1/c$ (=Torreyite)

LAWSONITE $Ca^{[8]}(H_2O)\{3\infty\}[Al_2^o(OH)_2\{g\}[Si_2^tO_7]]$ Ccmm

LEMOYNITE $(Na,K)_2^{[5/7]}Ca^{[6]}(H_2O)_{5\text{-}6}\{3\infty\}[Zr_2^oSi_{10}^tO_{26}]$ C2/c

LEUCOPHOSPHITE $K^{[6]}(H_2O)\{3\infty\}[(Fe,Al)_2^o(P^tO_4)_2(OH)(H_2O)]$ $P2_1/n$ (=Tinsleyite)

LEVYNE $NaCa_{2.5}(H_2O)_{18}\{3\infty\}[Si_{12}^tAl_6^tO_{36}]$ R $\bar{3}$m (Zeolite)

LIEBIGITE $Ca_2^{[8]}(H_2O)_{11}\{2\infty\}[UO_2\{g\}[C^{tr}O_3]_3]$ Bba2

LIOTTITE $(Ca,Na)8(H_2O)_2(SO_4,Cl,OH)_4\{3\infty\}[(Si,Al)_{12}^tO_{24}]$ P6 (≈Cancrinite)

LIROCONITE $Cu_2^oAl^oAs^t[O_4(OH)_4(H_2O)_4]$ $I\,2/a$

Table 72S

$A_pB_qC_rD_sE_x.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED (cont.)

LOVDARITE $K_2Na_6(H_2O)_9\{3\infty\}[Si_{14}{}^tBe_4{}^tO_{36}]$ $P2_12_12$
LÜNEBURGITE $(H_2O)_5\{2\infty\}[Mg_3{}^oB^t(OH)_3(P^tO_4)_2]$ $P\bar{1}$
MACDONALDITE $Ba^{[10]}Ca_4^{[6]}(HO)_2(H_2O)_{10}\{2\infty\}[Si_{16}{}^tO_{36}]$ Cmcm (≈Hydroxyapophyllite)
MAGNESIOAUBERITE $(Mg,Cu)^oAl^oS_2{}^t[O_8(H_2O)_{14}Cl]$ $P\bar{1}$ (=Auberite)
MAGNESIOCOPIAPITE $(H_2O)_6\{1\infty\}[Mg^oFe_3{}^oS_6{}^tO_{24}((OH)_2(H_2O)_8]\{g\}[Fe^o(H_2O)_6]$ $P\bar{1}$ (Subs.deriv.Copiapite)
MAPIMITE $Zn_2{}^oFe_3{}^oAs_3{}^t[O_{12}(OH)_4(H_2O)_{10}]$ Cm
MAZZITE $K_2CaMg(H_2O)_{28}\{3\infty\}[(Si,Al)_{36}{}^tO_{72}]$ $P6_3/mmc$... (≈Gmelinite,Zeolite)
MERLINOITE $(K,Na)_5(Ba,Ca)_2(H_2O)_{24}\{3\infty\}[(Si_{23}Al_9)O_{64}]$ I mmm (Zeolite)
MESOLITE $Na_2^{[6]}Ca_2^{[7]}(H_2O)_8\{3\infty\}[Al_6{}^tSi_9{}^tO_{30}]$ Fdd2 (≈Natrolite,Zeolite)
METAHEINRICHITE $(UO_2)_2Ba\{2\infty\}[(U^{[2+4]}O_2As^tO_4)_2]$ $P4_2$...
METATYUYAMUNITE $Ca(H_2O)_3\{2\infty\}[(UO_2)_2V_2O_8]$ Pnam (≈Carnotite)
META-URANOCIRCITE-I $(H_2O)_8[Ba\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ $P4_2/n$... (≈Meta-autunite)
META-URONOSPINITE $(H_2O)_8[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ P4/nmm (≈Meta-autunite)
METAVAUXITE $Fe^oAl_2{}^tP_2{}^t[O_8(OH)_2(H_2O)_8]$ $P2_1/c$
MILARITE $(H_2O)(K,Na)^{[12]}Ca_2{}^o(Be,Al)_3{}^t\{g\}[Si_{12}{}^tO_{30}]$ P6/mcc (=Armenite)
MINYULITE $K^{[8]}\{2\infty\}[Al_2{}^oP_2{}^tO_8(OH,F)(H_2O)_4]$ Pba2
MITRIDATITE $Ca_2^{[7]}(H_2O)_3\{2\infty\}[Fe_3{}^oP_3{}^tO_{12}]$ A2/a (=Arseniosiderite)
MONTEREGIANITE-(Y) $K_2^{[10]}(H_2O)_{10}Na_4{}^oY_2{}^o\{2\infty\}[Si_{16}{}^tO_{38}]$ $P2_1/n$ (≈Hydroxyapophyllite)
MURMANITE $Na_3{}^o(Ti,Nb)_4{}^oSi_4{}^t[O_{18}(H_2O)_4]$ $P\bar{1}$? (≈Bafertisite)
NATROCHALCITE $Na^{[8]}\{2\infty\}[Cu_2{}^oS_2{}^tO_8(OH)(H_2O)]$ C2/m
NATRODUFRENITE $\{3\infty\}[Na^oFe_6{}^oP_4{}^tO_{16}(OH)_6(H_2O)_2]$ C2/c (=Dufrenite)
NENADKEVICHITE $Na^{[6]}(H_2O)_2\{3\infty\}[\{3\infty\}[(Nb,Ti)^oSi_2{}^tO_6(O,OH)]$ Pbam
NOVÁCEKITE $(H_2O)_9[Mg^{[6]}\{2\infty\}[U^{[2+4]}O_2As^tO_4]$ $P4_2/n$ (≈Autunite)
OHMILITE $Sr_2^{[9]}Sr^{[8]}(Ti,Fe)^o(O,OH)(H_2O)_2\{1\infty\}[Si_4{}^tO_{12}]$ $P2_1/m$
OJUELAITE $Zn^oFe_2{}^oAs_2{}^t[O_8(OH)_2(H_2O)_4]^{c/h}$ $P2_1/c$ (≈Arthurite)
ORTHOSERPIERITE $\{3\infty\}[Ca^{[7]}(Cu,Zn)_4^{[6]}S_2{}^tO_8(OH)_6(H_2O)_3]$ $Pca2_1$ (≈Serpierite)
PAHASAPAITE $Li_8^{[6p1c]}(Ca,Li,K)_{10.5}^{[6p1c]}(H_2O)_{38}\{3\infty\}[Be_{24}{}^tP_{24}{}^tO_{96}]$ I 23 (≈Zeolite)
PARAUMBITE $K_3Zr_2{}^o(H_2O)_3\{1\infty\}[Si_3O_9]_2$. Orth. s.g.? (≈Wollastonite)
PARAVAUXITE $Fe^oAl_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_8]$ $P\bar{1}$ (≈Laueite)
PARTHÉITE $Ca_2Al_4{}^o(OH)_2(H_2O)_4\{3\infty\}[Si_4{}^tO_{15}]$ C2/c (≈Zeolite)
PENTAGONITE $(H_2O)_4\{3\infty\}[Ca^{[7]}V^{[5y]}Si_4{}^tO_{11}]$ $Ccm2_1$ (≈Cavansite)
PETARASITE $Na_5^{[7]}(Cl,OH)(H_2O)_2\{3\infty\}[Zr_2{}^oSi_6{}^tO_{18}]$ $P2_1/m$
PHARMACOSIDERITE $K(OH)_4(H_2O)_{6\text{-}7}\{3\infty\}[Fe_4{}^oAs_3{}^tO_{12}]$ $P\bar{4}3m$
POLYHALITE $K_2^{[11]}(H_2O)_2\{3\infty\}[Ca_2^{[8]}Mg^oSi_4{}^tO_{16}]$ $P\bar{1}$
POUGHITE $Fe_2{}^o(H_2O)_3\{g\}[Te^{[4y]}O_3\{g\}[S^tO_4]$ Pmnb
PROBERTITE $Na^{[6]}Ca^{[9]}(H_2O)_3\{1\infty\}[B_3{}^tB_2{}^{tr}O_7(OH)_4]$ $P2_1/c$
PSEUDOLAUEITE $Mn^oFe_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_{7\text{-}8}]$ $P2_1/a$
PYROAURITE $Mg_6{}^oFe_2{}^o(OH)_{16}\{2\infty\}[(C^{tr}O_3)(H_2O)_4]$ $R\bar{3}m$
RAPIDCREEKITE $\{3\infty\}[Ca^{[8ap]}S^tO_4C^{tr}O_3(H_2O)_4]$ Pcnb
RECTORITE $(H_2O)_2(Na,Ca)Al_4{}^o(OH)_4\{2\infty\}[(Si,Al)_8{}^tO_{20}]^{(2.s)c}$ Mon.s.g.? (≈Montmorillonite)
REEVESITE $Ni_6{}^oFe_2{}^o(OH)_{16}\{2\infty\}[(C^{tr}O_3)(H_2O)_4]$ R3m (=Pyroaurite)
RHODESITE $(H_2O)_{10}(K,Na)_2Ca_4(OH)_2\{2\infty\}[Si_{16}{}^tO_{36}]$ Pmam
ROBERTSITE $Ca_2^{[7]}(H_2O)_3\{2\infty\}[Mn_3{}^oP_3{}^tO_{12}]$ A2/a (=Arseniosiderite)
SANTACLARAITE $(H_2O)Hca^oMn_4{}^o(OH)\{1\infty\}[Si_5{}^{tO}{}_{15}]$ $B\bar{1}$ (≈Rhodonite)
SAPONITE $(H_2O)_4(Ca,Na)_{0.3}(Mg,Fe)_3{}^o(OH)_2\{2\infty\}[(Si,Al)_4{}^tO_{10}]^{(2.s)c}$ Cc
SAUCONITE $(H_2O)_4Na_{0.3}Zn_3(OH)_2\{2\infty\}[(Si,Al)_4{}^tO_{10}]^{(2.s)c}$ Cc (≈Vermiculite)
SAZHINITE-(Ce) $(H_2O)_6Hna^{[5]}Ce^{[6+1]}\{2\infty\}[Si_6{}^tO_{15}]$ Pmm2
SCAWTITE $Ca_7{}^oSi_6{}^tC^{tr}[O_{21}(H_2O)_2]$ I 2/m
SCHAURTEITE $\{3\infty\}[Ca_3^{[9]}Ge^oS_2{}^tO_8(OH)_6(H_2O)_3]$ $P6_3/mmc$... (=Fleischerite)
SCHERTELITE $\{3\infty\}[Mg^oP_2{}^tO_6(NH_4)_2(OH)_2(H_2O)_4]$ Pbca
SERPIERITE $\{3\infty\}[Ca^{[7]}(Cu,Zn)_4{}^oS_2{}^tO_8(OH)_6(H_2O)_3]$ C2/c
SIGLOITE $Fe^oAl_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_8]$ $P\bar{1}$ (=Laueite)
SJÖGRENITE $Mg_6{}^oFe_2{}^oC^{tr}[O_3(OH)_{16}(H_2O)_4]$ $P6_3/mmc$ (=Barbertonite)
SÖRENSENITE $Na_4^{[7]}Be_2{}^tSn^o(H_2O)_2\{1\infty\}[Si_3{}^tO_9]_2{}^{my}$ C2/c (≈Wollastonite)
STERCORITE $Na^oP^t[O_3(OH)(NH_4)(H_2O)_4]$ $P\bar{1}$ (≈Laueite)
STEWARTITE $Mn^oFe_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_8]$ $P\bar{1}$ (≈Laueite)
STICHTITE $Mg_6{}^oCr_2{}^o(OH)_{16}\{2\infty\}[(C^{tr}O_3)(H_2O)_4]$ R3m... (=Pyroaurite)
STRONTIODRESSITE $(OH)_4\{3\infty\}[(Sr,Ca)^{[9]}Al_2{}^o(H_2O)\{g\}[C^{tr}O_3]_2]$ Pbnm (=Dundasite)
STRUNZITE $Mn^oFe_2{}^oP2^t[O_8(OH)_2(H_2O)_6]$ $P\bar{1}$ (≈Laueite)
SVYAZHINITE $(Mg,Mn)^o(Al,Fe)^oS_2{}^t[O_8(H_2O)F]$ P1... (≈Aubertite)
TARANAKITE $(Al,Fe)_5{}^oH_6K_3(H_2O)_{14}\{2\infty\}[P_8{}^tO_{20}(H_2O)_4]$ $R\bar{3}c$... (≈Pyrophyllite)
TINSLEYITE $K^{[6]}(H_2O)\{3\infty\}[Al_2{}^o(P^tO_4)_2(OH)(H_2O)]$ P2/n... (=Leucophosphite)
TORREYITE $(Mg,Mn)_9{}^oZn_4{}^tS_2{}^t[O_8(OH)_{22}(H_2O)_8]$ $P2_1/c$ (=Lawsonbaucrite)
TYUYAMUNITE $Ca(H_2O)_{5\text{-}8}\{2\infty\}[(UO_2)(V_2O_8)]$ Pnan (≈Carnotite)
UKLONSKOVITE $Na^{[8]}Mg^{[6]}S^t[O_4(OH,F)(H_2O)_2]$ $P2_1/m$
ULEXITE $Ca^{[9]}Na^o(H_2O)_5\{g\}[B_3{}^tB_2{}^{tr}O_6(OH)_6]$ $P\bar{1}$
URALOLITE $Ca_2^{[7]}(H_2O)_5\{2\infty\}[Be_4{}^t(P^tO_4)_3(OH)_3]$ $P2_1/n$
USHKOVITE $Mg^oFe_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_8]$ $P\bar{1}$ (=Laueite)
VAUXITE $Fe^oAl_2{}^oP_2{}^t[O_8(OH)_2(H_2O)_6]$ $P\bar{1}$ (≈Laueite)

Table 73S

$A_pB_qC_rD_sE_x.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED (cont.)

VOLTAITE $(H_2O)_6\{3\infty\}[K_2^{[12]}Fe_8Al^oS_{12}{}^tO_{48}(H_2O)_{12}]$ Fd3c
WARDITE $(H_2O)_2\{3\infty\}[Na^{[8]}Al_3^{[6]}P_2{}^tO_8(OH)_4]$ $P4_12_12$...
WELOGANITE $Na_2{}^{[6/p]}(H_2O)_3(Sr,Ca)_3{}^{[10]}Zr^{[9]}\{g\}[C^{tr}O_3]_6$ P1
WIGHTMANITE $Mg_5{}^o[(OH)_5(H_2O)_2O\{g\}[B^{tr}O_3]]^{\langle Ts\rangle}$ I 2/m
XANTHOXENITE $Ca_4{}^oFe_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_3]$ P $\bar{1}$ (=Stewartite)
ZINCOBOTRYOGEN $(Zn,Mg,Mn)^oFe^oS_2{}^t[O_8(OH)(H_2O)_7]$ $P2_1/n$ (=Botryogen)
ZINCOCOPIAPITE $(H_2O)_6\{1\infty\}[Zn^oFe_3{}^oS_6{}^tO_{24}(OH)_2(H_2O)_8]\{g\}[Fe^o(H_2O)_6]$ P $\bar{1}$ (Subs.d.Copiapite)
ZINCOVOLTAITE $\{3\infty\}[K_2^{[12]}Fe_4{}^oZn_5{}^oS_{12}{}^tO_{48}(H_2O)_{18}]$ Fd3c (Subs.d.Voltaite)
ZORITE $Na_6{}^oTi_5^{[5/6]}(H_2O)_{11}\{3\infty\}[Si_{12}{}^tO_{34}(O,OH)_5]$ Cmmm (≈Zeolite)

MINERALS NOT YET CLASSIFIED

AGARDITE-(La) $(Cu,Ca)_6La(AsO_4)_3(OH)_6.3H_2O$ $P6_3/m$
●**AGARDITE-(Y)** $Cu_6(Y,Ca)(AsO_4)_3(OH)_6.3H_2O$ $P6_3/m$
AHEYLITE $(Fe,Zn)Al_6(PO_4)_4(OH)_8.4H_2O$ P $\bar{1}$
ALDERMANITE $(Mg,Ca)_5Al_{12}(PO_4)_8(OH)_{22}.32H_2O$ Orth. s.g.?
ALIETTITE $Ca_{0.2}Mg_6(Si,Al)_8O_{20}(OH)_4.4H_2O$ S.?
ALUMINOCOPIAPITE $(Al,Mg)Fe_4(SO_4)_6(OH,O)_2.20H_2O$ P $\bar{1}$
AMSTALLITE $CaAl(Si,Al)_4O_8(OH)_4.(H_2O,Cl)$ C2/c
BARBERTONITE $MgCr_2CO_3(OH)_{16}.4(H_2O$ $P6_3/mmc$
BAZHENOVITE $Ca_8S_5(S_2O_3)(OH)_2.20H_2O$ $P2_1/c$
BENTORITE $Ca_6(Cr,Al)_2(SO_4)_3(OH)_{12}.26H_2O$ $P6_3/mmc$
●**BUTTGENBACHITE** $Cu_{18}(NO_3)_2(OH)_{32}Cl_3.H_2O$ $P6_3/mmc$
CALCIOCOPIAPITE $CaFe_4(SO_4)_6(OH)_2.20H_2O$ P $\bar{1}$
●**CALLAGHANITE** $Cu_2Mg_2CO_3(OH)_6.2H_2O$ C2/c
CARBONATE-CYANOTRICHITE $Cu_4Al_2CO_3(OH)_{12}.2H_2O$ Orth.? s.g.?
CASSEDANNEITE $Pb_5(VO_4)_2(CrO_4)_2.H_2O$ A2/m...
CERULÉITE $Cu_2Al_7(AsO_4)_4(OH)_{13}.12H_2O$ P $\bar{1}$?
CHAIDAMUITE $ZnFe(SO_4)_2(OH).4H_2O$ $P2_1/m$...
CHALCOALUMITE $CuAl_4SO_4(OH)_{12}.3H_2O$ $P2_1$
CHALCOSIDERITE $CuFe_6(PO_4)_4(OH)_8.4H_2O$ P $\bar{1}$
CHAROITE $(K,Na)_5(Ca,Ba,Sr)_8Si_{18}O_{46}(OH,F).nH_2O$ Mon. s.g.?
CHELKARITE $CaMgB_2O_4Cl_2.7H_2O$? Pbca
CHENEVIXITE $Cu_2Fe_2(AsO_4)_2(OH)_4.H_2O$ $P2_1/m$
CHRYSOCOLLA $(Cu,Al)_2H_2Si_2O_5(OH)_4.nH_2O$? Cm?
CLAIRITE $(NH_4)_2(Fe,Mn)_3(SO_4)_4(OH)_3.3H_2O$ P $\bar{1}$?
CLINOTYROLITE $Ca_2Cu_9(AsO_4,SO_4)_4(OH,O)_{10}.10H_2O$ Pa...
COERULEOLACTITE $(Ca,Cu)Al_6(PO_4)_4(OH)_8.4$-$5H_2O$ Tric. s.g.?
COMBLAINITE $Ni_6Co_2CO_3(OH)_{16}.4H_2O$ R $\bar{3}$m...
●**CONNELITE** $Cu_{19}Cl_4SO_4(OH)_{32}.3H_2O$ P $\bar{6}2c$...
CREASEYITE $Cu_2Pb_2(Fe,Al)_2Si_5S_{17}.6H_2O$ Cmmm?
CUALSTIBITE $Cu_6Al_3(SbO_4)_3(OH)_{12}.10H_2O$ P3...
●**CURITE** $Pb_{6.5}(UO_2)_{16}O_{16}(OH)_{12}.(H_2O,OH)_4$ Pnam
CYANOPHYLLITE $Cu_5Al_2(SbO_4)_3(OH)_2.12H_2O$ Pmmb
CYANOTRICHITE $Cu_4Al_2SO_4(OH)_{12}.2H_2O$ Orth. s.g.?
CYRILOVITE $NaFe_3(PO_4)_2(OH)_4.2H_2O$ $P4_12_12$
DELRIOITE $SrCaV_2O_6(OH)_2.3H_2O$ I 2/a...
DESAUTELSITE $Mg_6Mn_2CO_3(OH)_{16}.4H_2O$ R3m...
EGGLETONITE $Na_2Mn_8(Si,Al)_{12}O_{29}(OH)_7.11H_2O$ I 2/a ...
EMBREYITE $Pb_5(CrO_4)_2(PO_4)_2.H_2O$ $P2_1m$
EZTLITE $Pb_2Fe_6Te_4O_{15}(OH)_{10}.8H_2O$ Mon. s.g.?
FAHEYITE $Be_2(Mn,Mg,Na)Fe_2^{3+}(PO_4)_4.6H_2O$ $P6_422$?
FAHLEITE $CaZn_5Fe_2(AsO_4)_6.14H_2O$ Orth. s.g.?
FAUSTITE $(Zn,Cu)Al_6(PO_4)_4.(OH)_8.4H_2O$ Tric. s.g.?
FLUCKITE $CaMn(AsO_3OH)_2.2H_2O$ P $\bar{1}$
FRANCOANELLITE $H_6(K,Na)_3(Al,Fe)_5(PO_4)_8.13H_2O$ R3c...
FRANZINITE $(Na,Ca)_7(Si,Al)_{12}O_{24}(SO_4,OH)_3.H_2O$ P $\bar{3}$m1...
●**GANOPHYLLITE** $(K,Na)_6(Mn,Al,Mg)_{24}(Si,Al)_{40}O_{96}(OH)_{16}.21H_2O$ A2/a
GATUMBAITE $CaAl_2(PO_4)_2(OH)_2.H_2O$ P2/m...
GLAUCOCERINITE $(Zn,Cu)_5Al_3(SO_4)_{1.5}(OH)_{16}.9H_2O$ Trig. s.g.?
GORMANITE $(Fe,Mg)_3Al_4(PO_4)_4(OH)_6.2H_2O$ P1...
GOUDEYITE $Cu_6(Al,Y)(AsO_4)_3(OH)_6.3H_2O$ $P6_3/m$...
HYDROHONESSITE $Ni_6Fe_2SO_4(OH)_{16}.7H_2O$ Hex. s.g.?
HYDROTALCITE $Mg_4Al_2(OH)_{12}CO_3.3H_2O$ R $\bar{3}$m
ILMAJOKITE $(Na,Ce,Ba)_{10}Ti_5Si_{14}O_{22}(OH)_{44}.nH_2O$ Mon. s.g.?
INDIGIRITE $Mg_2Al_2(CO_3)_4(OH)_2.15H_2O$ S.?
●**IOWAITE** $Mg_4FeOCl(OH)_8.2$-$4H_2O$ R $\bar{3}$m
IRHTEMITE $Ca_4MgH_2(AsO_4)_4.4H_2O$ Mon. s.g.?
KAHLERITE $Fe(UO_2)_2(AsO_4)_2.12H_2O$ $P4_2/n$
KANEMITE $HNaSi_2O_4(OH)_2.2H_2O$ Pnmb
KEYSTONEITE $H_{0.8}Mg_{0.8}(Ni,Fe,Mn)_2(TeO_3)_3.5H_2O$ $P6_3/m$
KIDWELLITE $NaFe_9(PO_4)_6(OH)_{10}.5H_2O$ A2/m...
KITTATINNYITE $Ca_2Mn_3Si_2O_8(OH)_4.9H_2O$ $P6_3/mmc$...
KLEEMANITE $ZnAl_2(PO_4)_2(OH)_2.3H_2O$ P2...
KOLFANITE $Ca_2Fe_3O_2(AsO_4)_3.2H_2O$ Mon. s.g.?
KOMAROVITE $(Ca,Mn)Nb_2(Si_2O_7)(O,F)_3.3.5H_2O$ Orth. s.g.?
LEHNERITE $Mn(UO_2)_2(PO_4)_2.8H_2O$ $P2_1/n$
LEIGHTONITE $K_2Ca_2Cu(SO_4)_4.2H_2O$ Fmmm
LUETHEITE $Cu_2Al_2(AsO_4)_2(OH)_4.H_2O$ $P2_1/m$
MANASSEITE $Mg_6Al_2CO_3(OH)_{16}.4H_2O$ $P6_3/mmc$
MATUALAITE $CaAl_{18}(PO_4)_{12}(OH)_{20}.28H_2O$ $P2_1/c$
MBOBOMKULITE $(Ni,Cu)Al_4(NO_3,SO_4)_2(OH)_{12}.3H_2O$ Mon. s.g.?
METAKAHLERITE $Fe(UO_2)_2(AsO_4)_2.8H_2O$ Tet. s.g.?
METAKIRCHHEIMERITE $Co(UO_2)_2(AsO_4)_2.8H_2O$ I 4/mmm
METALODEVITE $Zn(UO_2)_2(AsO_4)_2.10H_2O$ $P4_2/m$
METANOVÁCEKITE $Mg(UO_2)_2(AsO_4)_2.4H_2O$ P4/n
METASIDERONATRITE $Na_2Fe(SO_4)_2(OH).2H_2O$ Pbnm...
METAZELLERITE $Ca(UO_2)(CO_3)_2.3H_2O$ $Pbn2_1$...
●**MIXITE** $Cu_6Bi(AsO_4)_3(OH)_6.6H_2O$ $P6_3/m$
MONGOLITE $Ca_4Nb_6Si_5O_{24}(OH)_{10}.6H_2O$ Tet. s.g.?
MONSMEDITE $H_8K_2Tl_2(SO_4)_8.11H_2O$ Fd3c
MONTROYALITE $Sr_4Al_8(CO_3)_3(OH,F)_{26}.10H_2O$ Tric. s.g.?
MOUNTKEITHITE $(Mg,Ni)_{11}(Fe,Cr)_3(SO_4,CO_3)_{3.5}(OH)_{24}.11H_2O$ Hex. s.g.?
MUNDRABILLAITE $(NH_4)_2Ca(PO_3OH)_2H_2O$ Pm...
NISSONITE $CuMgPO_4(OH).2.5H_2O$ C2/c...
OGDENSBURGITE $(Ca,Zn,Mn)_4Fe_6(AsO_4)_5(OH)_{11}.5H_2O$ Bmmm...
OURSININE $(Co,Mg)(UO_2)_2Si_2O_7.6H_2O$ Aba2...
PARAROBERTSITE $Ca_2Mn_3(PO_4)_3O_2.3H_2O$ $P2_1/c$
PARSONSITE $Pb_2(UO_2)(PO_4)_2.0$-$2H_2O$ P $\bar{1}$
PETERSITE - (Y) $Cu_6(Y,Ca)(PO_4)_3(OH)_6.3H_2O$ $P6_3/m$...

Table 74S

$A_pB_qC_rD_sE_x.nAq.$(cont.)

MINERALS NOT YET CLASSIFIED (cont.)

PHYLLOTUNGSTITE $HCaFe_3(WO_4)_6.10H_2O$ P222...
PROTASITE $Ba(UO_2)_3O_3(OH)_2.3H_2O$ Pn
RAMEAUITE $K_2CaO_8(UO_2)_6.9H_2O$ C2/c
RIVADAVITE $Na_6Mg(B_6O_7(OH)_6)_4.10H_2O$ $P2_1/m$
●**RUIZITE** $Ca_2Mn_2Si_4O_{11}(OH)_4.2H_2O$ C2/m
SANTAFEITE $(Ca,Sr,Na)_3(Mn,Mg,Al,Fe)_4(VO_4)_4(OH)_5.2H_2O$ $B22_12$
SAYRITE $Pb_2(UO_2)_5O_6(OH)_2.4H_2O$ $P2_1/c$
SCHODERITE $Al_2(PO_4)(VO_4).8H_2O$ P2/m?
SHABYNITE $Mg_5BO_3(OH)_5(Cl,OH)_2.4H_2O$ Mon. s.g.?
●**SHIGAITE** $Mn_7Al_4(SO_4)_2(OH)_{22}.8H_2O$ R $\bar{3}$
SIDERONATRITE $Na_2Fe(SO_4)_2(OH).3H_2O$ Pbnm
SIELECKIITE $Cu_3Al_4(PO_4)_2(OH)_{12}.2H_2O$ P $\bar{1}$ ...
SODIUM PHARMACOSIDERITE $(Na,K)Fe_4(AsO_4)_3(OH)_5.7H_2O$ P $\bar{4}3m$
SODIUM-URANOSPINITE $(Na_2,Ca)(UO_2)_2(AsO_4)_2.5H_2O$ P4/nmm
SOUZALITE $(Mg,Fe)_3(Al,Fe)_4(PO_4)_4(OH)_6.2H_2O$ A2/m
SPHENISCIDITE $(NH_4,K)(Fe,Al)_2(PO_4)_2(OH).2H_2O$ $P2_1/n$
STRELKINITE $Na_2(UO_2)_2(VO_4)_2.6H_2O$ Pnmm...
TAKOVITE $Ni_6\ Al_2CO_3(OH)_{16}.4H_2O$ Trig. s.g.?
TERSKITE $Na_4ZrSi_6O_{15}(OH)_2.H_2O$ Pnc2
THORBASTNÄSITE $Th(Ca,Ce)(CO_3)_2F_2.3H_2O$ P $\bar{6}2c$
TOSUDITE $Na_{0.5}(Al,Mg)_6(Si,Al)_8O_{18}(OH)_{12}.5H_2O$ Orth. s.g.?
TUPERSSUATSIAITE $NaFe_3Si_8O_{20}(OH)_2.5H_2O$ C2/m
URAMPHITE $NH_4(UO_2)(PO_4).3H_2O$ Tet. s.g.?
URANOPILITE $(UO_2)_6SO_4(OH)_{10}.12H_2O$ Mon. s.g.?
VERTUMNITE $Ca_4Al_4Si_4O_6(OH)_{24}.3H_2O$ $P2_1/m$
WALLKILLDELLITE $Ca_4Mn_6(AsO_4)_4(OH)_8.18H_2O$ $P6_3/mmc$...
WEEKSITE $K_2(UO_2)_2Si_6O_{15}.4H_2O$ Pnnb
WILCOXITE $MgAl(SO_4)_2F.18H_2O$ P $\bar{1}$...
YAKHONTOVITE $(Ca,Na,K)_{0.2}(Cu,Fe,Mg)_2Si_4O_{10}(OH)_2.3H_2O$ Mon. s.g.?
ZAKHAROVITE $Na_4Mn_5Si_{10}O_{24}(OH)_6.6H_2O$ P31m...
ZAPATALITE $Cu_3Al_4(PO_4)_3(OH)_9.H_2O$ Tet. s.g.?
ZELLERITE $Ca(UO_2)(CO_3)_2.5H_2O$ $Pmn2_1$...
●**ZEOPHYLLITE** $Ca_{13}Si_{10}O_{28}(OH)_2F_8.6H_2O$ R $\bar{3}$...
ZINC-ZIPPEITE $Zn_2(UO_2)_6(SO_4)_3(OH)_{10}.16H_2O$ Orth.? s.g.?

$A_pB_qC_rD_sE_xF_y.nAq.$

SHEET

TRONA $_{2\infty}[Na_3{}^{a/p}H(H_2O)_2\{g\}[C^{tr}O_3]_2]$ C2/c
URANOPHANE $Ca^{[8]}(H_2O)_5H_2\{_{2\infty}\}[(U^{[2+5]}O_2)_2(Si^tO_4)_2]$ $P2_1$

MINERALS TENTATIVELY CLASSIFIED

ARDEALITE $Ca_2{}^oP^tS^t[HO_8(H_2O)_4]$ Cc. (≈Gypsum)
ATTAKOLITE $\{_{3\infty}\}[(Ca,Mn,Fe)_3{}^{[8]}Al_6{}^{[6]}P_5{}^tS_2{}^tO_{28}(H_2O)_3]$ C2/m
BETA-URANOPHANE $Ca(H_2O)_5H_2\{_{2\infty}\}[(UO_2)_2(Si^tO_4)_2]$ $P2_1/a$
CACOXENITE $(H_2O)_{75}\{_{3\infty}\}[Fe_{24}{}^oAl^{[5by]}O_6(P^tO_4)_{17}(OH)_{12}]$ $P6_3/m$
CETINEITE $(H_2O)_2\{_{3\infty}\}[K_{3.5}{}^o(Sb_2{}^{[3n]}O_3)_3Sb^{[3n]}S_3(OH)_{0.5}]$ $P6_3$
CHIAVENNITE $Ca^{[8]}Mn^{[6]}(H_2O)_2\ \{_{3\infty}\}[Si_5{}^tBe_2{}^t(OH)_2]$ Pnab
CHUKHROVITE - (Y) $(H_2O)_{10}\{_{3\infty}\}[Ca_3{}^o(Y,Ce)^oAl_2{}^oS^tO_4F_{13}]$ Fd3
CREEDITE $(H_2O)_2\{_{3\infty}\}[Ca_3{}^{[8]}Al_2{}^oS^t\ [O_4(OH)_2F_8]$ C2/c
CUPROSKLODOWSKITE $(H_2O)_6Cu^{[7by]}H_2\{_{2\infty}\}[(UO_2)_2(Si^tO_4)_2]$ P $\bar{1}$
DELHAYELITE $(H_2O)_{18}(Na,K)_{10}{}^{[8]}\{_{3\infty}\}[Ca_5{}^{[6]}Al_6{}^tSi_{32}{}^tO_{80}Cl_6]$ $Pmn2_1$ ... (≈Macdonaldite)
DEWINDTITE $Pb_2{}^{[8]}(H_2O)_7\{_{2\infty}\}[(U^{[7by/8by]}O_2)_4(OH)_3(P^tO_4)_3]$ Bmmb
DUMONTITE $Pb_2(H_2O)_5\{_{2\infty}\}[(UO_2)_3O_2(P^tO_4)_2]$(≈Dewindtite) $P2_1/a$
EAKERITE $Ca_2{}^{[8]}Sn^{[6]}(H_2O)_2\ \{_{2\infty}\}[Al^tSi_3{}^tO_9(OH)]_2$ $P2_1/m$ (≈Ussingite)
FAUJASITE $Na_{20}Ca_{12}Mg_8(H_2O)_{235}\{_{3\infty}\}[(Al_{60}Si_{132})^tO_{384}]$ Fd3m (≈Sodalite,Zeolite)
FERRARISITE $(H_2O)_9Ca_4{}^o\{_{2\infty}\}[Ca^{[7]}As_4{}^tO_{14}(OH)_2]$ P $\bar{1}$
FERRIERITE (monoclinic) $KNa_3Mg^o(H_2O)_{18}$ $\{_{3\infty}\}[(Al_5Si_{31})^tO_{72}]$ $P2_1/n$ (≈Mordenite,Zeolite)
GEIGERITE $Mn_5{}^oAs_4{}^t\ [O_{14}(OH)_2(H_2O)_{10}]$ P $\bar{1}$ (≈Chudobaite)
GRISCHUNITE $(H_2O)_2Ca_2{}^{[8]}\{_{3\infty}\}[Na^oMn_5{}^oFe^oAs_6{}^tO_{24}]$ Pcab
GUERINITE $(H_2O)_9Ca_4{}^o\{_{2\infty}\}[Ca^{[7]}As_4{}^tO_{14}(OH)_2]$ $P2_1/n$ (≈Ferrarisite)
GUILLEMINITE $(H_2O)_3Ba^{[10]}\{_{2\infty}\}[U_3{}^{[7/8]}(Se^{tr}O_3)_2O_8]$ $P2_1nm$ (≈Phosphuranylite)
GYROLITE $\{_{2\infty}\}[Na^oCa_{16}{}^o(H_2O)_{14}]\{_{2\infty}\}[Al^tSi_{24}{}^tO_{60}(OH)_8]$ P $\bar{1}$ (≈Reyerite)
HURÉAULITE $Mn_5{}^oP_4{}^t\ [O_{14}(OH)_2(H_2O)_4]$ C2/c
KAINOSITE – (Y) $(H_2O)\{_{3\infty}\}[Ca_2{}^{[8]}(Y,Ce)_2{}^{[8]}[g]\{Si_4{}^tO_{12}]C^{tr}O_3]$ Pmnb
KALIBORITE $(H_2O)_4\{_{3\infty}\}[K^{[8]}Mg_2{}^o[B_2{}^tB_4{}^{tr}O_8(OH)_5]_2]$ C2/c
KRIBERGITE $Al_5{}^oP_3{}^tS^t\ [O_{16}(OH)_4(H_2O)_4]$ Tric.s.g.? (≈Hotsonite)
LEIFITE $Na_6{}^{[7]}(OH)_2(H_2O)_{1.5}\ \{_{3\infty}\}[Be_2{}^tSi_{16}{}^tAl_2O_{39}]$ P $\bar{3}m1$
LUN'OKITE $(Mg,Fe)^o(Mn,Ca)^oAl^oP_2{}^t[O_8(OH)(H_2O)_4]$ Pbca (=Segelerite)
METAVOLTINE $(H_2O)_{18}\{_{3\infty}\}[K_2{}^{[9]}Na_6{}^oFe_7{}^oS_{12}{}^tO_{50}]$ P3
MONTGOMERYITE $(H_2O)_{12}Ca_4{}^{[8]}\{_{1\infty}\}[Mg^oAl_4{}^oP_6{}^tO_{24}(OH)_4]$ C2/c (=Calcioferrite,=Zodacite)
MORDENITE $K_{2.8}Na_{1.5}Ca_2(H_2O)_{29}\ \{_{3\infty}\}[Al_9{}^tSi_{39}{}^tO_{96}]$ $Cmc2_1$ (Zeolite)
NOSEAN $Na_8S^tO_4(H_2O)\{_{3\infty}\}[Si_6{}^tAl_6{}^tO_{24}]$ P $\bar{4}3n$ (≈Sodalite)
OFFRÉTITE $K^{[8]}Ca^{[6]}Mg^t(H_2O)_{15}\{_{3\infty}\}[Al_5{}^tSi_{13}{}^tO_{36}]$ P $\bar{6}m2$ (Zeolite)
OLMSTEADITE $(H_2O)_2K^{[8]}\{_{3\infty}\}[Fe_2{}^o(Nb,Ta)^oP_2{}^tO_{10}]$ $Pb2_1m$ (≈Montgomeryite)
OVERITE $Ca^o(H_2O)_4\{_{2\infty}\}[Mg^oAl^oP_2{}^tO_8(OH)]$ Pbca (=Segelerite)
PERETAITE $\{_{2\infty}\}[Sb_2{}^{[5by]}Sb_2{}^tO_4(OH)_2\{_{1\infty}\}[Ca^{8ap}S_2{}^tO_8(H_2O)_2]$ C2/c

Table 75S

$A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

MINERALS TENTATIVELY CLASSIFIED (cont.)

PHOSPHURANYLITE $Ca(H_2O)_6\{2\infty\}[(UO_2)_3(OH)_2(P^tO_4)_2]$ Cmcm (≈Dumontite)
PHURALUMITE $Al_2{}^o(OH)_4(H_2O)_{10}\{2\infty\}[(P^tO_4)_2(UO_2)_3(OH)_2]$ $P2_1/a$
PHURCALITE $Ca_2{}^{[7]}(OH)_2(H_2O)_4\{2\infty\}[(P^tO_4)_2(UO_2)_3(OH)_2]$ Pbca (≈Phuralumite)
p-VEATCHITE $(Sr,Ca)_2{}^{[10/11]}B(H_2O)(OH)_3\{2\infty\}[B_2{}^tB_3{}^{tr}O_8(OH)]_2$ $P2_1$
REYERITE $(Na,K)_2Ca_{14}{}^o(OH)_8(H_2O)_6\{2\infty\}[Si_{14}{}^tAl_2{}^tO_{38}]\{2\infty\}[Si_8{}^tO_{20}]$. P $\bar{3}$
SABUGALITE $(H_2O)_{16}[HAl\{2\infty\}[UO_2PO_4]_4]$ I 4/mmm (≈Autunite)
SAINFELDITE $Ca_5{}^oAs_4{}^t[O_{14}(OH)_2(H_2O)_4]$ C2/c (≈Villyaellenite)
SCHOONERITE $(H_2O)_9Zn^{[5]}\{2\infty\}[Mn^oFe_3{}^oP_3{}^tO_{12}]$ Pmab
SEGELERITE $Ca^o(H_2O)_4\{2\infty\}[Mg^oFe^oP_2{}^tO_8(OH)]$ Pbca (=Overite)
SENGIERITE $Cu_2{}^o(OH)_2(H_2O)_6\{2\infty\}[(UO_2)_2V_2O_8]$ $P2_1/a$
SINKANKASITE $\{2\infty\}[Mn^o(H_2O)_6\{1\infty\}[Al^o(P^tO_3OH)_2(OH)]]$ P $\bar{1}$
SLAVÍKITE $Na^{[3]}Mg_2{}^o(H_2O)_{33}\{2\infty\}[Fe_5{}^oS_7{}^tO_{28}(OH)_6]$ R $\bar{3}$
SWARTZITE $Mg^oCa^{[8ap]}(H_2O)_{12}[U^{[6p3c]}O_2\{g\}[C^{tr}O_3]_3]$ $P2_1/m$
SYNADELPHITE $(Mn,Mg,Ca)_9{}^oAs_2{}^oAs^{[5y]}[O_{11}(OH)_9(H_2O)_2]^{ch}$ Pnma
TERUGGITE $Mg^o(H_2O)_6\{3\infty\}[Ca_4{}^{[8]}(As^tB_6{}^{t/tr}O_{11}(OH)_6)_2(H_2O)_8]$ $P2_1/a$
THREADGOLDITE $(H_2O)_8(OH)[Al^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ Cc (≈Autunite)
TIPTOPITE $(Li,Na,Ca)_6K_2(H_2O)_{1\text{-}3}(OH)_2\{3\infty\}[Be_6{}^tP_6{}^tO_{24}]$ $P6_3$ (≈Cancrinite,Zeolite)
TRÖGERITE $U_2{}^oAs_2{}^t[O_{12}(H_2O)_6(H_3O)_2]$ P4/nmm
VANMEERSSCHEITE $(H_2O)_4(OH)_4U\{2\infty\}[(U^{[2+5]}O_2)]_3(P^tO_4)_2(OH)_2]$ $P2_1/mn$
VEATCHITE $Sr_2{}^{[10/11]}B^{tr}(OH)_3\{2\infty\}[B_2{}^tB_3{}^{tr}O_8(OH)]_2$ Aa
VILLYAELLENITE $(Mn,Ca,Zn)_5{}^oAs_4{}^t[O_{14}(OH)_2(H_2O)_4]$ Cc ... (≈Sainfeldite)
VISHNEVITE $(Na,K,Ca)_8(SO_4)(H_2O)_2\{3\infty\}[Si_6{}^tAl_6{}^tO_{24}]$ $P6_32$ ... (≈Cancrinite,Zeolite)
WERMLANDITE $Ca^oMg_7{}^o(Al,Fe)^oS_2{}^t[O_8(OH)_{18}(H_2O)_{12}]$ P $\bar{3}$c1 (≈Hydrocalumite)
ZODACITE $(H_2O)_{12}Ca_4{}^{[8]}\{1\infty\}[Mn^oFe_4{}^oP_6{}^tO_{24}(OH)_4]$ C2/c ... (=Montgomeryite)

MINERALS NOT YET CLASSIFIED

AJOITE $(K,Na)Cu_7AlSi_9O_{24}(OH)_6.3H2O$ P1 ...
ANDERSONITE $Na_2Ca(UO_2)(CO_3)_3.6H_2O$ R $\bar{3}$m
ARSENURANOSPATHITE $HAl(UO_2)_4(AsO_4)_4.40H_2O$ $P4_2/n$
ARSENURANYLITE $Ca(UO_2)_4(AsO_4)_2(OH)_4.6H_2O$ Bmmb ...
BANNISTERITE $KCaMn_{21}(Si,Al)_{32}O_{76}(OH)_{16}.12H_2O$ A2/a
BARIO-ORTHOJOAQUINITE $(Ba,Sr)_4Fe_2Ti_2O_2(SiO_3)_8.H_2O$ Ccmm ...
BERGENITE $(Ba,Ca)_2(UO_2)_3(PO_4)_2(OH)_4.5.5H_2O$ $P2_1/c$
BETPAKDALITE $(H,K)_6Ca_4Fe_6As_4Mo_{16}O_{74}.28H_2O$ C2/m
BIJVOETITE - (Y) $(Y,Dy)_2(UO_2)_4(CO_3)_4(OH)_6.11H_2O$ C2ma ...
BUKOVSKÝITE $Fe_2(AsO_4)(SO_4)(OH).7H_2O$ P $\bar{1}$ ...
BURANGAITE $(Na,Ca)_2Fe_2Al_{10}(PO_4)_8(O,OH)_{12}.4H_2O$ C2/c
CALCIOFERRITE $Ca_4Mg(Fe,Al)_4(PO_4)_6(OH)_4.13H_2O$? C2/c ?
CALCURMOLITE $Ca(UO_2)_3(MoO_4)_3(OH)_2.11H_2O$ S.?
CANAVESITE $Mg_2(HBO_3)(CO_3).5H_2O$ P2/m
CARBOBORITE $Ca_2Mg(B(OH)_4)_2(CO_3)_2.4H_2O$ $P2_1/m$
CHERNIKOVITE $(H_3O)(UO_2)PO_4.3H_2O$ P4/nmm ?
CHUDOBAITE $(Mg,Zn)_5(AsO_4)_2(AsO_3OH)_2.10H_2O$ P $\bar{1}$
CLINOUNGEMACHITE $K_3Na_9Fe(SO_4)_6(OH)_3.9H_2O$ Mon.s.g.?
COBALT- ZIPPEITE $Co(UO_2)_6(SO_4)_3(OH)_{10}F_8.16H_2O$ S.?
DIADOCHITE $Fe_2(PO_4)(SO_4)(OH).5H_2O$ P1 ...
DONNAYITE - (Y) $NaSr_3CaY(CO_3)_6.3H_2O$ P $\bar{1}$
DUHAMELITE $Cu_4Pb_2Bi(VO_4)_4(OH)_3.8H_2O$ Orth.s.g.?
EPISTOLITE $Na_5TiNb_2(Si_2O_7)_2(O,F)_4.5H_2O$ P1
FURONGITE $Al_{13}(UO_2)_7(PO_4)_{13}(OH)_{14}.58H_2O$ P1 ...
GRIMSELITE $K_3Na(UO_2)(CO_3)_3.H_2O$ P $\bar{6}$2c
HOTSONITE $Al_{11}(SO_4)_3(PO_4)_2(OH)_{21}.16H_2O$ Tric.s.g.?
HÜGELITE $Pb_2(UO_2)_3(AsO_4)_2(OH)_4.3H_2O$ Mon.s.g.?
HYDRODELHAYELITE $KCa_2(Si_7Al)O_{17}(OH)_2.6H_2O$ $Pnm2_1$
JOHANNITE $Cu(UO_2)_2(SO_4)_2(OH)_2.8H_2O$ P1
JOHNWALKITE $K(Mn,Fe)_2(Nb,Ta)O_2(PO_4)_2.2(H_2O,OH)$ $Pb2_1m$
JONESITE $(K,Na)_2Ba_4Ti_4Al_2Si_{10}O_{36}.6H_2O$ $B22_12$
JUNGITE $Ca_2Zn_4Fe_8(PO_4)_9(OH)_9.16H_2O$ Pcmm ...
KAMOTOITE – (Y) $Y_2O_4(UO_2)_4(CO_3)_3.14H_2O$ $P2_1/n$
KECKITE $(Ca,Mg)(Mn,Zn)_2Fe_3(PO_4)_4(OH)_3.2H_2O$ $P2_1/a$
KINGSMOUNTITE $(Ca,Mn)_4FeAl_4(PO_4)_6(OH)_4.12H_2O$ C2
LAPLANDITE - (Ce) $Na_4CeTiPSi_7O_{22}.5H_2O$ Pmmm
LAVENDULAN $NaCaCu_5(AsO_4)_4Cl.5H_2O$ Orth.s.g.?
LOUDOUNITE $NaCa_5Zr_4Si_{16}O_{40}(OH)_{11}.8H_2O$ S.?
MAGNESIUM-ZIPPEITE $Mg_2(UO_2)(SO_4)_3(OH)_{10}.16H_2O$ S.?
MARTHOZITE $Cu(UO_2)_3(SeO_3)_3(OH)_2.7H_2O$ Pnma ...
MCKELVEYITE - (Y) $NaBa_3(Ca,U)Y(CO_3)_6.3H_2O$ P $\bar{3}$
METAVANMEERSSCHEITE $U(UO_2)_3(PO_4)_2(CO_3)_6.2H_2O$ Fddd
METAVANURALITE $Al(UO_2)_2(VO_4)_2(OH).8H_2O$ P $\bar{1}$
MILLISITE $(Na,K)CaAl_6(PO_4)_4(OH)_9.3H_2O$ $P4_12_12$?
MOLURANITE $H_4U(UO_2)_3(MoO_4)_7.18H_2O$ Amorph.
MOREAUITE $Al_3(UO_2)(PO_4)_3(OH)_2.13H_2O$ $P2_1/c$
●MOTUKOREAITE $(Mg_6Al_3(OH)_{18})(Na_{0.6}(SO_4,CO_3)_2).12H_2O$ R $\bar{3}$m
MUNDITE $Al(UO_2)_3(PO_4)_2(OH)_3.5.5H_2O$ $P2_1cn$ ...
NAKAURIITE $Cu_8(SO_4)_4(CO_3)(OH)_6.48H_2O$ Orth.s.g.?
NICKEL-ZIPPEITE $Ni_2(UO_2)_6(SO_4)_3(OH)_{10}.16H_2O$ S.?
OBOYERITE $H_6Pb_6(TeO_3)_3(TeO_6)_2.2H_2O$ P $\bar{1}$ ...
PARNAUITE $Cu_9(AsO_4)_2(SO_4)(OH)_{10}.7H_2O$ $P2_122$
PERLIALITE $K_9Na(CaSr)(Al_{12}Si_{24})O_{72}.15H_2O$ P6/mmm
PHOSPHOFIBRITE $KCuFe_{15}(PO_4)_{12}(OH)_{12}.12H_2O$ Pbmn ...
PSEUDOBOLÉITE $28PbCl_2.2AgCl.24Cu(OH)_2.14H_2O$(?) I 4/mmm
RANKACHITE $CaFeV_4O_4(WO_4)_8.12H_2O$ Pmmm
RENARDITE $Pb(UO_2)_4(PO_4)_2(OH)_4.7H_2O$ Bmmb

Table 76S

$A_pB_qC_rD_sE_xF_y.nAq.$(cont.)

MINERALS NOT YET CLASSIFIED (cont.)

SAKHAITE $Ca_3Mg(BO_3)_2(CO_3).nH_2O$ Fd3m
SAMPLEITE $NaCaCu_5(PO_4)_4Cl.5H_2O$ 2/m ...
SANJUANITE $Al_2(PO_4)(SO_4)(OH).9H_2O$ Tric.s.g.?
SARMIENTITE $Fe_2(AsO_4)(SO_4)(OH).5H_2O$ $P2_1/c$
SATIMOLITE $KNa_2Al_4(B_2O_5)_3Cl_3.13H_2O$ Orth.s.g.?
SCHUILINGITE - (Nd)
$CuPb(Nd,Gd,Sm,Y)(CO_3)_3(OH).1.5H_2O$ $P2_1cn$
SHARPITE $Ca(UO_2)_6(CO_3)_5(OH)_4.6H_2O$ Orth.s.g.?
SODIUM - ZIPPEITE $Na_4(UO_2)_6(SO_4)_3(OH)_{10}.4H_2O$ Orth.s.g.?
SPANGOLITE $Cu_6AlSO_4(OH)_{12}Cl.3H_2O$ P3c1
SVEITE $KAl_7(NO_3)_4(OH)_{16}Cl_2.8H_2O$ Mon.s.g.?
SWAMBOITE $H_6U(UO_2)_6(SiO_4)_6.30H_2O$ $P2_1/a$
TENGCHONGITE $Ca(UO_2)_6(MoO_4)_2O_5.12H_2O$ $A2_122$
TISINALITE $H_3Na_3(Mn,Ca,Fe)TiSi_6(O,OH)_{18}.2H_2O$ R $\bar{3}$m
TLALOCITE $Cu_{10}Zn_6Te_3O_{11}Cl(OH)_{25}.27H_2O$ Orth.s.g.?
TRASKITE $Ba_{12}Fe_2Ti_6Si_{12}O_{54}Cl_3.7H_2O$ P $\bar{6}$m2
TRIANGULITE $Al_3(UO_2)_4(PO_4)_4(OH)_5.5H_2O$ P1
ULRICHITE $CaCu(UO_2)(PO_4)_2.4H_2O$ C2/m
URANCALCARITE $Ca(UO_2)_3CO_3(OH)_6.H_2O$ Pbnm ...
URANOSPATHITE $HAl(UO_2)_4(PO_4)_4.40H_2O$ $P4_2/n$
URANOTUNGSTITE $(Fe,Ba,Pb)(UO_2)_2WO_4(OH)_4.12H_2O$ $P222_1$ ...
URSILITE $(Mg,Ca)_4(UO_2)_4(Si_2O_5)_{5.5}(OH)_5.13H_2O$ Orth.s.g.?
VANURALITE $Al(UO_2)_2(VO_4)_2(OH).11H_2O$ A2/a
VEATCHITE – A $Sr_2(B_5O_8(OH))_2B(OH)_3.H_2O$ A1 ...
VLADIMIRITE $Ca_5(AsO_4)_2(AsO_3OH)_2.5H_2O$ $P2_1/c$
VOGLITE $Ca_2Cu(UO_2)(CO_3)_4.6H_2O$ $P2_1$ ...
WALPURGITE $Bi_4O_4(UO_2)(AsO_4)_2.2H_2O$ P $\bar{1}$
WILHELMVIERLINGITE $CaMnFe(PO_4)_2(OH).2H_2O$ Pbca
YUKSPORITE $(K,Ba)NaCa_2(Si,Ti)_4O_{11}(F,OH).H_2O$ Orth.s.g.?
●**ZIPPEITE** $K_4(UO_2)_6(SO_4)_3(OH)_{10}.4H_2O$ C2/c
ZYKAITE $Fe_4(AsO_4)_3SO_4(OH).15H_2O$ Orth.s.g.?

$A_pB_qC_rD_sE_xF_yG_z.nAq.$

MINERALS TENTATIVELY CLASSIFIED

BAKERITE $Ca_4\{2\infty\}[B_8{}^tSi_3{}^tO_{12}(OH)_3]$ $P2_1/c$ (≈Datolite)
CAYSICHITE - (Y)
$(Ca,Yb,Er)_4{}^{[8]}(H_2O)_7\{3\infty\}[Si_6{}^tO_{20}\{g\}[C^{tr}O_3]_6(OH)]$ $Ccm2_1$
CHALCOPHYLLITE $Cu_9{}^oAl^oAs_2{}^tS_{1.5}{}^t[O_{14}(OH)_{12}(H_2O)_{18}]$ R $\bar{3}$
CHARLESITE $Ca_6{}^{[8]}(H_2O)_{26}\{3\infty\}[Al_2{}^oS_2{}^tB^tO_8(OH)_4(OH,O)_{12}]$ P31c (=Sturmanite)
DEMESMAEKERITE
$Pb_2{}^{[9]}(H_2O)_2\{3\infty\}[Cu_6{}^oSe_6{}^{[4y]}U_2{}^{[7y]}O_{22}(OH)_6]$ P $\bar{1}$
ERIONITE $K_2{}^{[12]}NaCa_{1.5}Mg(H_2O)_{28}\{3\infty\}[Al_8{}^tSi_{28}{}^tO_{72}]$ $P6_3/mmc$ (Zeolite)
HUMBERSTONITE $K_3{}^{[10]}(H_2O)_6\{2\infty\}[Na_7{}^oMg_2{}^oS_6{}^tN_2{}^{tr}O_{30}]$ R $\bar{3}$ (Subs.d.Ungemachite)
JAHNSITE - (CaMnFe) $Ca^{[6]}Mn^{[6]}Fe_2{}^{(2+)o}Fe_2{}^{(3+)o}P_4{}^t[O_{16}(OH)_2.(H_2O)_8]$ Mon.s.g.?
JAHNSITE - (CaMnMg) $Ca^{[6]}Mn^{[6]}(Mg,Fe)_2{}^oFe_2{}^{(3+)o}P_4{}^t[O_{16}(OH)_2(H_2O)_8]$ P2/a (≈Whiteite)
JAHNSITE - (CaMnMn) $Ca^{[6]}Mn^{[6]}Mn_2{}^oFe_2{}^{(3+)o}P_4{}^t[O_{16}(OH)_2(H_2O)_8]$ P2/a ...
MORINITE $(H_2O)_2\{3\infty\}[Ca_2{}^{[8]}Na^{[5by]}\{g\}[Al_2{}^oP_2{}^tO_8(OH)F_4]]$ $P2_1/m$
PICROPHARMACOLITE
$(H_2O)_{11}Ca_4{}^{[6/7]}\{2\infty\}[Mg^oAs_4{}^tO_{14}(OH)_2]$ P $\bar{1}$ (≈Guerinite)
RICHELSDORFITE
$(H_2O)_6\{2\infty\}[Sb^o(OH)_6]\{2\infty\}[Ca_2{}^{[7]}Cu_5{}^{[5]}Cl(As^tO_4)_4]$ C2/m (≈Whiteite)
ROSCHERITE (Monoclinic)
$(H_2O)_2Ca^{[7]}\{3\infty\}[(Mg,Fe)_2{}^oAl_x{}^oP_3{}^tO_{12}(OH)_3]$ C2/c
ROSCHERITE (Triclinic)
$(H_2O)_3Ca^{[7]}\{3\infty\}[Mn_2{}^oFe_x{}^oP_3{}^tO_{12}(OH)_2]$ C $\bar{1}$
ROUBAULTITE $(H_2O)_4\{3\infty\}[Cu_2{}^oU_3{}^{[7/8]}C_2{}^{tr}O_{14}(OH)_2]$ P $\bar{1}$
STRONTIOJOAQUINITE
$(Na,Fe)_2Ba_2Sr_2Ti_2{}^o(O,OH)_2(H_2O)\{2\infty\}[Si_8{}^tO_{24}]$ P2 ...
STRONTIO-ORTHOJOAQUINITE $Na_2Ba_2Sr_2Ti_2{}^o(O,OH)_2.(H_2O)\{2\infty\}[Si_8{}^tO_{24}]$ Pcam ...
STURMANITE $Ca_6{}^{[8]}Al_2{}^oS_2{}^t[O_8(OH)_{16}(H_2O)_{25}]$ P31c ? (=Ettringite)
THAUMASITE $Ca_6{}^{[8]}Si^oC^{tr}O_3S^t[O_7(OH)_6(H_2O)_{12}]$ $P6_3$ (≈Ettringite)
TUSCANITE
$K^{[10]}Ca_6(H_2O)(OH)\{g\}[S^tO_4]\{g\}[C^{tr}O_3]_2\{2\infty\}[(Si,Al)_{10}{}^tO_{22}]$ $P2_1/a$
UNGEMACHITE $K_3{}^{[10]}Na_8{}^{[6]}(H_2O)_6\{g\}[Fe^o(S^tO_4)_6]\{g\}[N^{tr}O_3]_2$ R $\bar{3}$
WENKITE $Ba_4{}^{[12]}Ca_6{}^{[8]}(OH)_2(SO_4)_3(H_2O)_n\{3\infty\}[(Si,Al)_{20}{}^tO_{39}]$ P $\bar{6}$2m
WHITEITE - (CaFeMg)
$Ca^{[8]}(Fe,Mn)^{[6]}Mg_2{}^oAl_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_8]$ P2/a (≈Jahnsite)
WHITEITE - (MnFeMg)
$Mn^{[8]}Fe^{[6]}Mg_2{}^oAl_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_8]$ P2/a ...
WHITEITE - (CaMnMg)
$Ca^{[8]}Mn^{[6]}Mg_2{}^oAl_2{}^oP_4{}^t[O_{16}(OH)_2(H_2O)_8]$ P2/a
WICKSITE $Ca_2{}^{[9]}(H_2O)_2\{3\infty\}[Na^oMg^oFe^o(Fe,Mn)_4{}^oP_6{}^tO_{24}]$ Pcab

Table 77S

$A_pB_qC_rD_sE_xF_yG_z.nAq.$ (cont.)

MINERALS NOT YET CLASSIFIED

AËRINITE $Ca_4(Al,Fe,Mg)_{10}Si_{12}O_{36}(OH)_{12}CO_3.12H_2O$ Mon.s.g.?
ALBRESCHTSCHRAUFITE $Ca_4Mg(UO_2)_2(CO_3)_6F_2.17H_2O$ P $\bar{1}$
BURCKHARDTITE $Pb_2(Fe,Mn)Te(Si_3Al)O_{12}(OH)_2.H_2O$ Mon.s.g.?
BYELORUSSITE - (Ce) $NaBa_2Ce_2MnTi_2Si_8O_{26}(F,OH).H_2O$ $P2_12_12_1$
ENGLISHITE $K_3Na_2Ca_{10}Al_{15}(PO_4)_{21}(OH)_7.26H_2O$ A2/a ...
FRANÇOISITE - (Nd) $(Nd,Y,Sm,Ce,Pr)(UO_2)_3(PO_4)_2O(OH).6H_2O$ $P2_1/c$
FRANSOLETITE $Ca_3Be_2(PO_4)_2(PO_3OH)_2.4H_2O$ $P2_1/a$
HYDROMBOBOMKULITE $(Ni,Cu)Al_4(NO_3)_2(SO_4)(OH)_{12}.14H_2O$ Mon.s.g.?
ILÍMAUSSITE - (Ce) $Na_4Ba_2CeFeNb_2Si_8O_{28}.5H_2O$ $P6_3/mcm$ ...
●**JOURAVSKITE** $Ca_3Mn(SO_4)(CO_3)(OH)_6.12H_2O$ $P6_3$ ...
KAMITUGAITE $PbAl(UO_2)_5((P,As)O_4)_2(OH)_9.9.5H_2O$ P1 ...
LANNONITE $HCa_4Mg_2Al_4(SO_4)_8F_9.32H_2O$ Tet.s.g.?
MACQUARTITE $CuPb_3(CrO_4)SiO_3(OH)_4.2H_2O$ C2/m ...
MANTIENNEITE $KMg_2Al_2Ti(PO_4)_4(OH)_3.15H_2O$ Pbca
MCNEARITE $NaCa_5(AsO_4)(AsO_3OH)_4.4H_2O$ P1 ...
MELKOVITE $CaFe_2Mo_5O_{10}(PO_4)_2(OH)_{12}.8H_2O$ Mon.s.g.?
NICKELALUMITE $(Ni,Cu)Al_4(SO_4)(NO_3)_2(OH)_{12}.3H_2O$ Mon.s.g.?
PAULKERRITE $K(Mg,Mn)_2Ti(Fe,Al)_2(PO_4)_4(OH)_3.15H_2O$ Pbca
PEISLEYITE $Na_3Al_{16}(PO_4)_{10}(SO_4)_2(OH)_{17}.20H_2O$ Mon.s.g.?
PERHAMITE $Ca_3Al_7(SiO_4)_3(PO_4)_4(OH)_3.16.5H_2O$ P6/mmm
PLANERITE $Al_6(PO_4)_2(PO_3OH)_2(OH)_8.4H_2O$ P $\bar{1}$?
POTTSITE $PbBi(VO_4)(VO_3OH).2H_2O$ $I4_122$
RABBITTITE $Ca_3Mg_3(UO_2)_2(CO_3)_6(OH)_4.18H_2O$ $P2_1/a$?
RANUNCULITE $Al(UO_2)(PO_3OH)(OH)_3.4H_2O$ Mon.s.g.?
RITTMANNITE $(Mn,Ca)Mn(Fe,Mn,Mg)_2(Al,Fe)_2(PO_4)_4(OH)_2.8H_2O$ P2/a
SHABAITE - (Nd) $Ca(Nd,Sm,Y)_2(UO_2)(CO_3)_4(OH)_2.6H_2O$ P2 ...
●**SKLODOWSKITE** $(H_3O)_2Mg(UO_2)_2(SiO_4)_2.4H_2O$ C2/m
SODIUM BETPAKDALITE $Na_2CaFe_2^{3+}(As_2O_4)(MoO_4)_6.15H_2O$ Mon.s.g.?
SODIUM BOLTWOODITE $(H_3O)(Na,K)(UO_2)SiO_4.H_2O$ $P2_12_12_1$
TYROLITE $CaCu_5(AsO_4)_2(CO_3)(OH)_4.6H_2O$ Pmma
UPALITE $Al(UO_2)_3(PO_4)_2O(OH).7H_2O$ Bbcm ...
VOCHTENITE $(Fe^{2+},Mg)Fe^{3+}(UO_2)_4(PO_4)_4(OH).12\text{-}13H_2O$ Mon.s.g.?
WALENTAITE $H_4Ca_4Fe_{12}(AsO_4)_{10}(PO_4)_6.28H_2O$ I 222 ...
WYARTITE $Ca_3U(UO_2)_6(CO_3)_2(OH)_{18}.4H_2O$ $P2_12_12_1$
YECORAITE $Fe_3Bi_5O_9(TeO_3)(TeO_4)_2.9H_2O$ S.?

$A_pB_qC_rD_sE_xF_yG_z...$ nAq.

MINERALS TENTATIVELY CLASSIFIED

ALTHUPITE
$U^{[7by]}Th^{[6p3c]}Al^{o}O(OH)_3(H_2O)_{15}\{2\infty\}[(UO_2)_3O(OH)(P^tO_4)_2]_2$ P $\bar{1}$ (≈Phosphuranylite)
ASHCROFTINE - (Y)
$K_5^{[10/12]}Na_5^{[8/12]}(Y,Ca)_{12}(C^{tr}O_3)_8(H_2O)_8(OH)_2\{2\infty\}[Si_{28}{}^tO_{70}]$ I 4/mmm (≈Apophyllite)
CARLETONITE
$K^{[10]}Na^{[5+1]}Ca^{[7]}(CO_3)_4(F,OH)(H_2O)\{2\infty\}[Si_8{}^tO_{18}]$ P4/mbm
EHRLEITE $Ca_2^{[7/8]}(P^tO_3OH)(H_2O)_4\{2\infty\}[Zn^tBe^tP_2{}^tO_8]$ P $\bar{1}$
JOAQUINITE - (Ce)
$Na^{[6]}Ba_2^{[10]}Fe^{[5]}Ti_2{}^oCe_2^{[7]}O_2(OH)(H_2O)\{2\infty\}[Si_4{}^tO_{12}]_2$ C2
ORTHOJOAQUINITE - (Ce)
$Na^{[6]}Ba_2^{[10]}Fe^{[5]}Ti_2{}^oCe_2^{[7]}O_2(O,OH)(H_2O)\ \{2\infty\}[Si_4{}^tO_{12}]_2$ Ccmm...
PUMPELLYITE - (Fe^{2+}) $Ca_2^{[7]}(H_2O)\{3\infty\}[Fe^{o}Al_2{}^oSi_3{}^tO_{11}(OH)_2]$ A2/m (≈Clinozoisite)
PUMPELLYITE - (Fe^{3+}) $Ca_2^{[7]}(H_2O)\{3\infty\}[Fe^{o}Al_2{}^oSi_3{}^tO_{11}(OH)_2]$ A2/m (≈Clinozoisite)
PUMPELLYITE - (Mg) $Ca_2^{[7]}(H_2O)\{3\infty\}[Mg^{o}Al_2{}^oSi_3{}^tO_{11}(OH)_2)]$ A2/m
PUMPELLYITE - (Mn) $Ca_2^{[7]}\ (H_2O)\{3\infty\}[Mn^{o}Al_2{}^oSi_3{}^tO_{11}(OH)_2]$ A2/m
ROEBLINGITE $Ca_6{}^oPb_2(OH)_2(H_2O)_4\{2\infty\}[Mn^{o}(Si_3{}^tO_9)_2]$ C2/m
SCHRÖCKINGERITE
$(H_2O)_4\{2\infty\}[NaCa_3(UO_2)(C^{tr}O_3)_3(S^tO_4)F(H_2O)_6]$ P $\bar{1}$ ...
SHUISKITE $Ca_2^{[7]}\{3\infty\}[Mg^{o}Cr_2{}^oSi^tO_4Si_2{}^tO_7(OH)_2(H_2O)]$ A2/m (=Pumpellyite)
VISÉITE $Ca_{10}Al_{24}(PO_4)_{14}F_3O_{13}(H_2O)_{72}\{3\infty\}[Si_6{}^tO_{24}]$ Cub.s.g.? (≈Analcime,Zeolite)

Table 78S

$A_pB_qC_rD_sE_xF_yG_z$... nAq.(cont.)

MINERALS NOT YET CLASSIFIED

ASSELBORNITE $(Pb,Ba)(UO_2)_6(BiO)_4(AsO_4)_2(OH)_{12}.3H_2O$ Im3m...
CHESSEXITE $Na_4Ca_2Mg_3Al_8(SiO_4)_2(SO_4)_{10}(OH)_{10}.40H_2O$ Orth.s.g.?
COCONINOITE $Fe_2^{3+}Al_2(UO_2)_2(PO_4)_4(SO_4)(OH)_2.20H_2O$ Orth.s.g.?
IQUIQUEITE $K_3Na_4Mg(CrO_4)B_{24}O_{39}(OH).12H_2O$ P31c
LEPERSONNITE - (Gd) $Ca(Gd,Dy)_2(UO_2)_{24}(CO_3)_8Si_4O_{12}.60H_2O$ Pnnm ...
MACHATSCHKIITE $(Ca,Na)_6(AsO_4)(AsO_3OH)_3PO_4.15H_2O$ R3c
MCAUSLANITE $Fe_3Al_2(PO_4)_3(PO_3OH)F.18H_2O$ P1...
MENDOZAVILITE $NaCa_2Fe_6(PO_4)_2(PMo_{11}O_{39})(OH,Cl)_{10}.33H_2O$ S.?
OBRADOVICITE $H_4(K,Na)CuFe_2(AsO_4)(MoO_4)_5.12H_2O$ Pcmn
ORPHEITE $H_6Pb_{10}Al_{20}(PO_4)_{12}(SO_4)_5(OH)_{40}.11H_2O$(?) R $\bar{3}$m
PARAMENDOZAVILITE $NaAl_4Fe_7(PO_4)_5(PMo_{12}O_{40})(OH)_{16}.56H_2O$ S.?
SARYARKITE - (Y) $Ca(Y,Th)Al_5(SiO_4)_2(PO_4)_2(OH)_7.6H_2O$ $P42_12$...
SERGEEVITE $Ca_2Mg_{11}(CO_3)_4(HCO_3)_4(OH)_4.6H_2O$ Trig.s.g.?
STEENSTRUPINE - (Ce) $Na_{14}Ce_6Mn_2Fe_2Zr(PO_4)_7Si_{12}O_{36}(OH)_2.3H_2O$ R $\bar{3}$m
TATARSKITE $Ca_6Mg_2(SO_4)_2(CO_3)_2Cl_4(OH)_4.7H_2O$ S.?
XIANGJIANGITE $(Fe,Al)(UO_2)_4(PO_4)_2(SO_4)_2(OH).22H_2O$ Tet.s.g.?

ORGANIC MINERALS

GROUP

UREA {g}[$C^{tr}O(NH_2)_2$] P $\bar{4}2_1$m

MINERALS TENTATIVELY CLASSIFIED

ABELSONITE {g}[$NiC_{31}H_{32}N_4$] P1...
ACETAMIDE {g}[$C^{tr}O(CH_3)(NH_2)$] R3c
CALCLACITE {g}[$Ca(CH_3COO)Cl(H_2O)_5$] $P2_1/a$
FICHTELITE {g}[$C_{19}H_{34}$] $P2_1$
HARTITE {g}[$C_{20}H_{34}$] P $\bar{1}$
HUMBOLDTINE {1∞}[$C_2O_4Fe(H_2O)_2$] C2/c
KLADNOITE {g}[$C_6H_4(CO)_2NH$] $P2_1/n$
KRATOCHVÍLITE {g}[$C_{13}H_{10}$] Pnam
MELLITE $Al_2^{o}(H_2O)_{16}${g}[$C_6(COO)_6$] $P4_1/acd$
URICITE {g}[$C_5H_4N_4O_3$] $P2_1a$
WEDDELLITE $(H_2O)_2Ca[O]_2${g}[CO_2] I 4/m

MINERALS NOT YET CLASSIFIED

AMBER |C,H,O| Amorph.
EARLANDITE $Ca_3(C_6H_5O_7)_2.4H_2O$ Mon.s.g.?
EVENKITE $C_{24}H_{50}$ Mon. $P2_1/a$
FLAGSTAFFITE $C_{10}H_{22}O_3$ Fdd2
GLUSHINSKITE $MgC_2O_4.2H_2O$ C2/c
GUANINE $C_5H_3(NH_2)N_4O$ $P2_1/n$
HOELITE $C_{14}H_8O_2$. $P2_1/a$
IDRIALITE $C_{22}H_{14}$ Orth.s.g.?
KARPATITE $C_{24}H_{12}$. P2/c
MINGUZZITE $K_3Fe(C_2O_4)_3.3H_2O$ Mon.s.g.?
MOOLOOITE $CuC_2O_4.nH_2O$ Orth.s.g.?
OXAMMITE $(NH_4)_2C_2O_4.H_2O$ $P2_12_12$
PHYLLORETINE $C_{18}H_{18}$ Pnn2
REFIKITE $C_{20}H_{32}O_2$ $P2_12_12$
SIMONELLITE $C_{19}H_{24}$ Pnaa
STEPANOVITE $NaMgFe(C_2O_4)_3.8\text{-}9H_2O$ Trig.s.g.?
●**WHEATLEYITE** $Na_2Cu(C_2O_4)_2.2H_2O$ P $\bar{1}$
●**WHEWELLITE** $CaC_2O_4.H_2O$ $P2_1/c$
ZHEMCHUZHNIKOVITE $NaMg(Al,Fe)(C_2O_4)_3.8H_2O$ Trig.s.g.?

Tale 79S **MINERAL STRUCTURE TYPES corresponding to general structural formulas $A_mB_n.nAq.$ up to $A_pB_r...E_xF_y...nAq.$, and to organic minerals**

	CLOSE-PACKED	GROUP
$A_mB_n.nAq.$		
$A_pB_qC_r.nAq.$	**MANJIROITE** $Mn_8^{o}(Na,K)O_{16}(H_2O)_n]^{cnn}$ (Dist.d.Hollandite)	**NATRON** $[\{g\}Na_2^{o}(H_2O)_{10}\{g\}[C^{tr}O_3]^{c}]$
$A_pB_qC_rD_s.nAq.$	**CLINOHEDRITE** $Ca^{o}Zn^{t}Si^{t}[O_4(H_2O)]^{c}$ **JUNITOITE** $Ca^{o}Zn_2^{t}Si_2^{t}[O_7(H_2O)]^{c}$	
$A_pB_qC_rD_sE_x.nAq$		
$A_pB_qC_rD_sE_xF_y.nAq$		
$A_pB_qC_rD_sE_xF_yG_z.nAq$		
$A_pB_qC_rD_sE_xF_yG_z...$ nAq.		
ORGANIC MINERALS		**UREA** $\{g\}[C^{tr}O(NH_2)_2]$

CHAIN	SHEET	FRAMEWORK
	GYPSUM $\{2\infty\}[Ca^{[6+2]}(H_2O)_2S^tO_4]$	**KIESERITE** $3\infty[Mg^oS^tO_4(H_2O)]$ **VARISCITE** $(H_2O)_2\{3\infty\}[Al^oP^tO_4]$
BORAX $\{g\}[B_2^{tr}B_2^tO_5(OH)_4\{1\infty\}[Na_2^o(H_2O)_8]$ **COLEMANITE** $Ca^{[7]}(H_2O)\{1\infty\}[B^{tr}B_2^tO_4(OH)_3]^{my}$	**HALLOYSITE-10Å** $(H_2O)_2\{2\infty\}[Al_2^o(OH)_4\{2\infty\}[Si_2^tO_5]^c]$ **PALYGORSKITE** $(Mg,Al)_2^o(H_2O)_4(OH)\{2\infty\}[Si_4^tO_{10}]$ **SEPIOLITE** $Mg_4^o(H_2O)_8(OH)_2\{2\infty\}[Si_6^tO_{15}]$	**ANALCIME(cubic)** $Na(H_2O)\{3\infty\}[Si_2^tAl^tO_6]$ (Zeolite) **CHABAZITE** $(Ca,\square_5)(H_2O)_9\{3\infty\}[Al_4^tSi_4^tO_{16}]$ (Zeolite) **GISMONDINE** $Ca_2(H_2O)_9\{3\infty\}[Al_4^tSi_4^tO_{16}]$ **HEULANDITE** $(Na,K,Ca,Sr,Ba)_5^{[6]}(H_2O)_{28}\{3\infty\}[Al_9^tSi_{27}^tO_{72}]$ (Zeolite) **NATROLITE** $Na_2^o(H_2O)_2\{3\infty\}[Si_3^tAl_2O_{10}]$ (Zeolite) **SCOLECITE** $Ca^{[7]}(H_2O)_3\{3\infty\}[Si_3^tAl_2O_{10}]$
	AUTUNITE $(H_2O)_{10}[Ca_6^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ **CARNOTITE** $K_2^{[11]}(H_2O)_3\{2\infty\}[(U^{[2+5]}O_2)_2(V_2^{[5]}O_8)]$ **HYDROXYAPOPHYLLITE** $Ca_4^{[7]}K^{[8]}(OH,F)(H_2O)_8\{2\infty\}[Si_8^tO_{20}]^*$ **META-AUTUNITE** $(H_2O)_6[Ca^{[6]}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ **METATORBERNITE** $(H_2O)_8[Cu^{aq}\{2\infty\}[U^{[2+4]}O_2P^tO_4]_2]$ **MONTMORILLONITE** $(H_2O)_n$ $(Na,Ca)_{0.3}^o(Al,Mg)_2^o(OH)_2\{2\infty\}[Si_4^tO_{10}]^{(2.s)c}$ **VERMICULITE** $(H_2O)_8Mg_{0.7}^o$ $(Mg,Fe,Al)_6^o(OH)_2\{2\infty\}[(Si,Al)_8^tO_{22}]^{(2.s)c}$	**PHILLIPSITE** $K^{[12]}(Ca_{0.5},Na)_2^{[6]}(H_2O)_6\{3\infty\}[Si_5^tAl_3^tO_{16}]$ (Zeolite) **STILBITE** $Na^{[8]}Ca_4^{[8]}(H_2O)_{30}\{3\infty\}[Si_{27}^tAl_9O_{72}]$ (Zeolite) **THOMSONITE** $NaCa_2(H_2O)_6\{3\infty\}[Al_5^tSi_5^tO_{20}]$ (Zeolite) **TURQUOISE** $Cu^{[8]}(H_2O)_4\{3\infty\}[Al_6^o(OH)_8(P^tO_4)_4]$ **WILLHENDERSONITE** $(K,Ca,\square_4)(H_2O)_5\{3\infty\}[Al_3^tSi_3^tO_{12}]$ (Deriv.Chabazite,Zeolite)
	TRONA $\{2\infty\}[Na_3^{o/p}H(H_2O)_2\{g\}[C^{tr}O_3]_2]$ **URANOPHANE** $Ca^{[8]}(H_2O)_5H_2\{2\infty\}[(U^{[2+5]}O_2)_2(Si^tO_4)_2]$	

Table 80S

Minerals from $A_mB_n.nAq.$ up to $A_pB_qC_rD_sE_xF_yG_z...nAq.$ and organic minerals

	CLOSE-PACKED	GROUP	CHAIN	SHEET	FRAMEWORK	TENT.CLASS.	NOT YET CLASS.	TOTAL
$A_mB_n.nAq$	-	-	-	-	-	8	14	22
$A_pB_qC_r.nAq$	1	1	-	1 (+2)	2 (+10)	61 (+9)	65 (+●2)	154
$A_pB_qC_rD_s.nAq$	2	-	2	3 (+1)	6 (+1)	154	117 (+●11)	297
$A_pB_qC_rD_sE_x.nAq$	-	-	-	7 (+15)	5 (+1)	151	107 (+●11)	297
$A_pB_qC_rD_sE_xF_y.nAq$	-	-	-	2	-	58	85 (+●2)	147
$A_pB_qC_rD_sE_xF_yG.nAq$	-	-	-	-	-	27	33 (+●2)	62
$A_pB_qC_rD_sE_xF_yG...nAq$	-	-	-	-	-	14	16	30
ORGANIC MINERALS	-	1	-	-	-	11	17 (+●2)	31
TOTAL	3	2	2	13 (+18)	13 (+12)	484 (+9)	454 (+●38)	1040

Amorpous 10

X(+y) x(structure types) +y(Population+derivatives)
Z(+●) z(minerals) +●w(minerals with determined structure)

MINERAL STRUCTURE TYPES

	CLOSE-PACKED	GROUP	CHAIN	SHEET	FRAMEWORK	TOTAL	% CLOSE-PACKED
$A_mB_n.nAq$	-	-	-	-	-	-	-
$A_pB_qC_r.nAq$	1	1	-	1	2	5	20.0
$A_pB_qC_rD_s.nAq$	2	-	2	3	6	13	15.4
$A_pB_qC_rD_sE_x.nAq$	-	-	-	7	5	12	-
$A_pB_qC_rD_sE_xF_y.nAq$	-	-	-	2	-	2	-
$A_pB_qC_rD_sE_xF_yG.nAq$	-	-	-	-	-	-	-
$A_pB_qC_rD_sE_xF_yG...nAq$	-	-	-	-	-	-	-
ORGANIC MINERALS	-	1	-	-	-	1	-
TOTAL	3	2	2	13	13	33	9.1

Table 81S

CLOSE-PACKED MINERALS

	CLOSE-PACKED	CLOSE-PACKED TENT. CLASSIFIED	TOTAL CLOSE-PACKED	TOTAL MINERALS	% CLOSE-PACKED
$A_mB_n.nAq$	-	8	8	22	36.4
$A_pB_qC_r.nAq$	1	76	77	154	50.0
$A_pB_qC_rD_s.nAq$	2	62	64	299	21.4
$A_pB_qC_rD_sE_x.nAq$	-	34	34	300	11.3
$A_pB_qC_rD_sE_xF_y.nAq$	-	9	9	147	6.1
$A_pB_qC_rD_sE_xF_yG.nAq$	-	9	9	62	14.5
$A_pB_qC_rD_sE_xF_yG...nAq$	-	-	-	30	-
ORGANIC MINERALS	-	-	-	32	-
TOTAL	3	197	201	1040	19.3

CRYSTALLOGRAPHIC PARAMETERS OF MINERAL STRUCTURES

	≤15Å	>15Å	≤25Å	>25Å	TOTAL	%≤15Å	%≤25Å
$A_mB_n.nAq$	12	5	17	-	17	70.6	100.0
$A_pB_qC_r.nAq$	114	65	165	14	179	63.7	92.2
$A_pB_qC_rD_s.nAq$	153	129	261	21	282	54.3	92.6
$A_pB_qC_rD_sE_x.nAq$	125	166	260	31	291	43.0	89.3
$A_pB_qC_rD_sE_xF_y.nAq$	38	103	120	21	141	27.0	85.1
$A_pB_qC_rD_sE_xF_yG.nAq$	23	36	51	8	59	39.0	86.4
$A_pB_qC_rD_sE_xF_yG...nAq$	7	18	21	4	25	28.0	84.0
ORGANIC MINERALS	13	14	24	3	27	48.1	88.9
TOTAL	485	536	919	102	1021	47.5	90.0

Conclusions

This work is the first attempt to present a structural classification of the whole domain of minerals, and, like any pioneer work, it will certainly be incomplete and contain a number of errors. Its aim is to relate the mineral structures in a natural and easy way, and this is accomplished by a structural classification and the use of structural formulas. What is now required is to develop and improve the structural formulas, by revisiting works on structure determination of minerals, and to pay more attention to the new determinations in order to present complete structural descriptions.

There is a clear tendency in minerals towards close packing (for the highest density of atoms, in agreement with the stability principle of Laves, 1956). As Moore said (1995, p. 3): "a large number, probably several hundreds (of closest-packed structures), have been overlooked through misrepresentation in early studies". However such a tendency decreases with the complexity of the chemical formula.

Some of the minerals that were tentatively classified as close-packed have afterwards been confirmed to be so. Examples are: Allactite $Mn_7^{o}As_2^{t}[(OH)_4O_8]^{ch}$ $P2_1/a$, Arsenoclasite $Mn_5^{o}As_2^{t}[(OH)_4O_8]^{ch}$ $P2_12_12_1$ and Flinkite $Mn_2^{o}Mn^{[6by]}As^{t}[O_4(OH)_4]^{ch}$ Pnma (Moore 1995, p. 15–19) (see Vol. 2, Tables 73, 75 and 86).

Considering this strong tendency towards close packing, one should try first to determine if the mineral structure fits in a close packing or not. To achieve this purpose, appropiate graphical projections should be used along with computer programs developed in order to facilitate the solution of the structural problem.

The computer programs should enable the plane direction with the highest density of atoms in a structure to be found, and also the structure to be sliced along a certain plane direction (hkl). Attempts to develop such programs, namely the PRSH and the PRCM programs, were made by Langlet (1975). Some interesting computer programs are already commercially available, such as *Diamond* (Bergerhoff, 1995).

The analysis of the crystallographic parameters of the unit cell of the various minerals has shown that many mineral structures have small crystallographic parameters, equal to 15Å or less (Tables 81S of Vol. 3, 63S of Vol. 2 and 25S of Vol. 1). However, when mineral structures are sampled for crystallographic parameters not greater than 25Å, their numbers increase significantly over those pertaining to 15Å: some 90% for structures dealt with in Vol. 3, 92% for those in Vol. 2, and 94% for Vol. 1. So much so that, once we have covered the whole domain of minerals, we are in a position to state that *most of the mineral structures have crystallographic parameters that do not exceed 25Å*. This fact is possibly related to some short-range mechanism of mineral crystallization.

Many minerals are based not on ideal but on slightly distorted close packings, therefore it is interesting to measure the packing efficiency of the mineral structures. Some authors have proposed such measurements, examples being Zoltai and Stout (1984) and Moore (1992). One of the difficulties in the determination of the structural categories of the mineral structures results from the fact that many mineralogists are not much concerned with close packings but rather with clusters or higher structural units. On the other

hand, when they think of close packings they restrict themselves to the closest packings and not to close packings in a wider sense. If a mineral structure is not based on a close packing, it is however interesting to search for its close packing analogue, and for this new computer programs are called for.

Further to the well established character of the chemical plus structural classification of minerals, a number of arguments may be evoked for the predominance of the structural over the chemical factor. Gottardi wrote in 1984: "[...] a purely structural classification is unavoidable nowadays, but with the disadvantage of having galena and rock salt in the same box". Even Strunz in certain cases gives more importance to the structural than to the chemical factor, for instance in placing together arsenates and phosphates on account of their structural similarity (Tagilite–Euchorite group, Strunz, 1982, pp. 340–341).

On the other hand the use of the chemical plus structural classification does not always lead to the same results. Examples are the works of Strunz and Povarennykh, which do not present the same list of similar minerals for the same mineral group. A specific example is the Seidozerite group (Seidozerite–Lamprophyllite group, Strunz, 1982, p. 394, and Seidozerite group, Povarennykh, 1966/1972, p. 398). The structural classification avoids this ambiguity, because it has well defined rules for the organization of similarity among minerals.

We are at the beginning of the structural classification of minerals. What is necessary now is to develop and use computer programs which will facilitate a better structural description of minerals, the study of the relation between their structure and properties, and relationships among the minerals. If one wants to understand the minerals and their properties one has first to use structural formulas, as was strongly recommended by the Nomenclature Commission of the International Union of Crystallography (Lima-de-Faria *et al.*, 1990).

On perusing the three volumes of this complete set, one cannot help feeling the health of information laid before one as tabled structure types. Although the tables are essentially concerned with structural formulas, on some of them, namely, Tables 1S to 21S, 27S to 59S, and 73S to 78S, the space groups have also been indicated. This was done whenever it was felt that a tool should be provided to clearly distinguish a given structure type from its distortion derivatives. In order not to overload the tables, however, the author has resisted the temptation to generalize the use of such a device: when its mention was not deemed compulsory, the space group has not been included in the tables. However, because complete information is strongly desirable, it is forseeable that, in the rather near future, the space group (information on physical properties) will usually be added to the symbol of the structure type, as proposed by Lima-de-Faria and Figueiredo (1976) and Lima-de-Faria (1994) (information of the structural formula). For instance, $Na^{o}[Cl]^{c}$ $Fm\bar{3}m$ will probably become common for the structure type symbol of halite.

General table of mineral basic structure types

Now that we have produced the three volumes of the structural classification of minerals, we might care to provide a bird's-eye view of the main mineral structure types. To do this we do not need to deal with all the structure types, but just select the main atomic arrangements of minerals that correspond to the so-called basic structure types, and display them in a table. Only the classified structure types are included in this general table, and not the tentatively classified.

According to Buerger (1947), when considering the relationships among structures, an assemblage of structures emerges: the derivatives, which differ very little in atomic arrangement from the basic structure. There are two kinds of derivatives: the distortion derivatives which result from a slight distortion of the basic structure, and the substitution derivatives which come from the replacement of certain chemical elements by others. Examples are Herzenbergite $Sn^{o}[S]^{c}$ Pnma which is a distortion derivative of Halite $Na^{o}[Cl]^{c}$ $Fm\bar{3}m$, and Matildite $Ag^{o}Bi^{o}[S_2]^{c}$ $P\bar{3}m1$ which is a substitution derivative of Halite. By slightly distorting or by changing the chemical elements one does not change the whole structure much; consequently the basic structure, its population, the distortion and substitution derivatives form a family, namely the assemblage of structures with more similarity.

The basic structure, according to Buerger, is the structure with higher symmetry. The same is stated by Megaw (1973), who gives the term aristotype to the simplest and most symmetrical member of the structure type. The population of a structure type consists of structures which have the same general structural formula and space group.

With this general table, one aims at an understanding of the variety of mineral structures and their relationships. With the study of the mineral families one intends to understand the changes in properties and symmetry resulting from slight distortions and chemical changes.

The general table will be found inside the back cover of the book.

List of important typographical corrections in Vol. 2

p. 2 Aikinite. Am.Mim. for Am.Min.

p.4 Ardeite. Equivalent positions are wrong (they belong to Arsenoclasite)

p.6 Berryite. Z=6 for Z=4.

p.8 Carbocernaite. Alter Si to Sr.

p.10 Clinochrysotile. Z=2 for Z=4.

(These errors have been pointed out by Dr. P. Bayliss and are here very gratefully acknowledged.)

Acknowledgements

Thanks are due for the support facilities afforded by the Instituto de Investigação Científica Tropical, in particular its Presidente Professor Joaquim Cruz e Silva, and by the Director of the Crystallographic and Mineralogical Center Professor Maria Ondina Figueiredo. Grateful acknowledgements are made to my wife Natasha for assistance and revision of the structure types and the mineral names, and to my friend Doctor Arnaldo Silvério for helping with the English. I am also very grateful to Ana Luisa Cunha who typed many tables and gave much help in overcoming some computer difficulties.

Finally, thanks are due to the Acquisition Editor of Kluwer Academic Publishers, Ms. Petra van Steenbergen, for her interest and encouragement in publishing this book.

References

Bergerhoff, G. (1995) "Diamond" computer program.

Buerger, M.J. (1947) Derivative crystal structures. *J. Chem. Physics*, *15*, 1–16.

Gottardi, G. (1984) "The classification of minerals". *Acta Cryst. A40*, Supplement, C-208 (Abstracts ECM-13, Hamburg).

Gottardi, G and Galli, E. (1985) *Natural Zeolites*. Springer, Berlin.

Langlet, G.A. (1975) Extension of the FIGATOM program to automatic plotting of layers in close-packed structures. *J. Appl. Cryst.*, 9, 320.

Laves, F. (1956) "Crystal structure and atomic size". In *Theory of Alloy Phases*. American Soc. of Metals, Cleveland, USA.

Lima-de-Faria, J., Hellner, E., Liebau, F., Makovicky, E., and Parthé, E. (1990) "Nomenclature of inorganic structure types. Report of the International Union of Nomenclature, Sub-Committee on the Nomenclature of inorganic structure types". *Acta Cryst. A46*, 1–11.

Megaw, H. (1973) *Crystal structures. A working approach*. W.B. Saunders Company, Philadelphia.

Moore, P.B. (1992) "Betapakdalite unmasked, and a comment on bond valences". *Aust. J. Chem.*, 45, 1335–1354.

Moore, P.B. (1995) "Closest-packed Mineral Structures of Franklin-Ogdensburg: Kepler's Gift on the Snow Flake" (private communication).

Povarennykh, A.S. (1966) *Crystal Chemical Classification of Minerals*. (in Russian) Naukova Dunka, Kiev. English translation Plenum Press, New York, 1972.

Strunz, H. (1982) *Mineralogische Tabellen*. Akademische Verlagsgesellschaft, Leipzig.

Zoltai, T. and Stout, J.H. (1984) *Mineralogy. Concepts and Principles*. Burgess Publishing Company, Minneapolis, USA.

Mineral Index